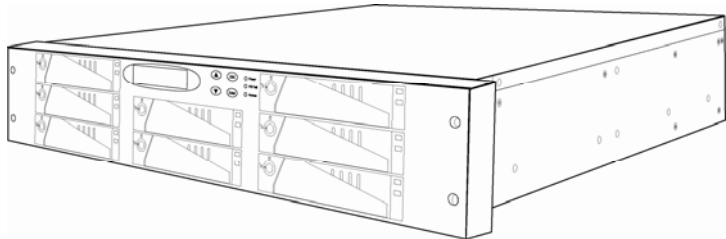


Orion NAS 820SR Hardware User Manual

Version 1.0

NAS Series— Network Hard Disk Drive Array

Operation Manual



Foreword

About this manual

The purpose of this manual is to assist users to understand the Orion 820 SR family of Network Attached Storage with Hard Disk Drive Array functionality and to operate the system easily.

All information in this manual have been verified carefully to ensure the correctness of its contents. In case of negligence or error, please provide feedback to us. MaxTronic International Co., Ltd. reserves the right to modify the contents of this manual without any notice in advance.

Limited Warranty

MaxTronic International Co., Ltd. guarantees all network hard disk drive arrays are thoroughly tested before they leave the factory and should function normally under general conditions. In case of any system malfunction, MaxTronic International Co., Ltd. and its local representatives will be responsible for its repair without cost to the customer, if the product failed within the warranty period and under normal usage.

MaxTronic International Co., Ltd. is not responsible for any damage or loss of data, deemed to be caused by its products. It is highly recommended that Users conduct the necessary back-up practices.

EMC Certified

This product has passed FCC Class B inspection. Appropriate certifications have also been approved, e.g. CE, UL, C-Tick, CB and BSMI.

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Foreword

Product Name: NAS system NAS Network Hard Disk Drive Array
Manual Revision: 1.0 (820SR)
Release Date: October, 2006

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Thank You for purchasing Orion NAS System NAS network hard disk drive array by MaxTronic International Co., Ltd.!

To ensure proper installation and operation of the NAS network hard disk drive array, please first read the operation guide and other important information in this manual.

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Chapter 1

Introduction to Orion 820SR NAS FAMILY

Orion 820SR Family of NAS by MaxTronic International Co., Ltd. is a RAID enabled NAS (Network Attached Storage). The ability of the unit to conduct continual self tests, beyond unsymmetrical fault tolerance, data validation functions provided by RAID Level 0, Level 1, Level 3 and Level 5, the availability of cooling fans and hot-swap function make the Orion 820 family of network attached storage with hard disk drive array even more stable and easy to use.

1-1 Orion 820SR NAS Family Features

- Completely OS Independent networking storage system.
- Basic system configuration is easily done via web browser.
- LCD Front Control Panel displays the system status and OS Configuration.
- Hard Disk Drive Error indicator LED.
- Automatic Formatting, Data Replacement and Recovery.
- Optimized Data Access through the setting of stripe size of hard disk drive.
- Support UPS devices (APC Smart UPS and Back UPS ES500(RS-232)).
- Support 2xRJ45 Ethernet Port. (Two 10/100/1000 Mb)
- Quick Configuration Function makes first-time system

configuration easy.

- Firmware upgradeable.
- Support hard disk drive hot-swap and Global hot-spare.
- Fan and Power System Failure automatic detection.
- Automatic over-temperature detection.

1-2 Using this Manual

The following icons will help you to identify important information, when use this manual.



This icon indicates helpful key points and information.



This icon indicates a warning, to avoid making damages to the software, the hardware, or the data.

1-3 Items in the Package

Please ensure that the packaging housing the unit is not damaged before opening your Orion 820 Family of NAS. Items in the package include:

- Orion 820SR NAS System
- Power Cord * 2
- 2 Meter Length RJ45 Cable * 2
- Accessory Bag
- Operation Manual in Hard Copy

If there is any question, please contact your local dealer.

Chapter 2

Getting Started and Quick Configuration

This chapter covers “Quick Configuration” of the system to get started with Orion NAS System network HDD array.

Basically, we assume the system administrator who operates this system, has adequate level of understanding of HDD array and LAN related knowledge.

2-1 System Hardware Installation and Configuration

The basic hardware setup includes: the system itself, 8 hot-swappable caddies, two power cords, two network cables, and a set of key.

2-2 Hard Disk Drive Installation

Install a hard disk drive (HDD) in the HDD caddy by connecting the HDD to the connector at the rear of the HDD caddy. Since your Orion NAS System supports hot swap, it is not necessary to shutdown the system upon HDD removal or replacement of “One” drive. However, all practices relating to RAID systems must be observed.



In the event that more than one drive needs to be removed, the system must be shut down to avoid data corruption.

Chapter 2

Please follow these steps to add HDD into Orion NAS System network HDD array.

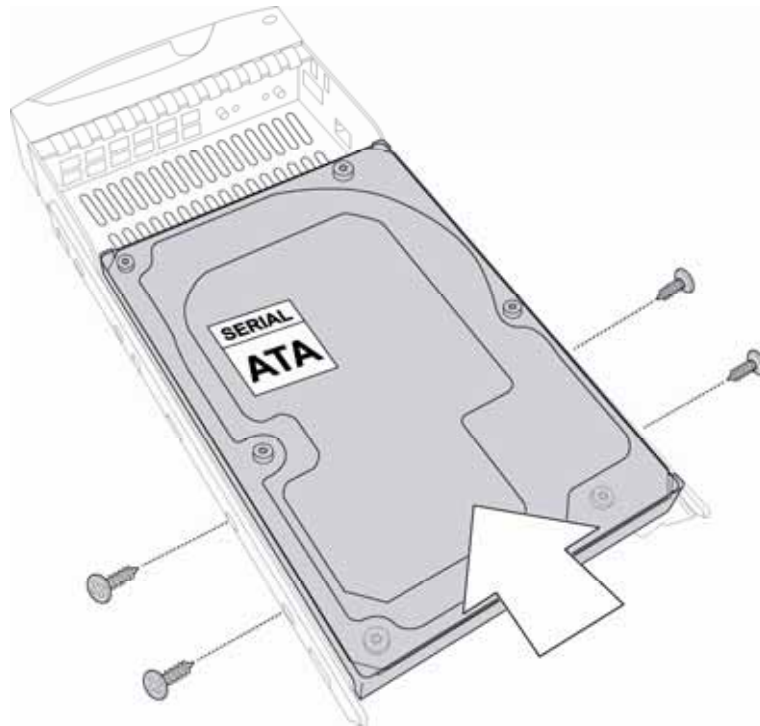


Figure 2-1 Hard Disk Drive Installation

1. Withdraw the HDD caddy out from Orion NAS System.
2. Place the SATA HDD into the HDD caddy, as shown in Figure 2-1 and secure with the screws provided.
3. Insert the HDD caddy back into Orion NAS System. (Lock if desired.)

2-3 Network Connection

Orion NAS System supports two Gigabit Ethernet port. Under normal circumstances, simply connect a network cable from NAS Ethernet to the switch and it will work.

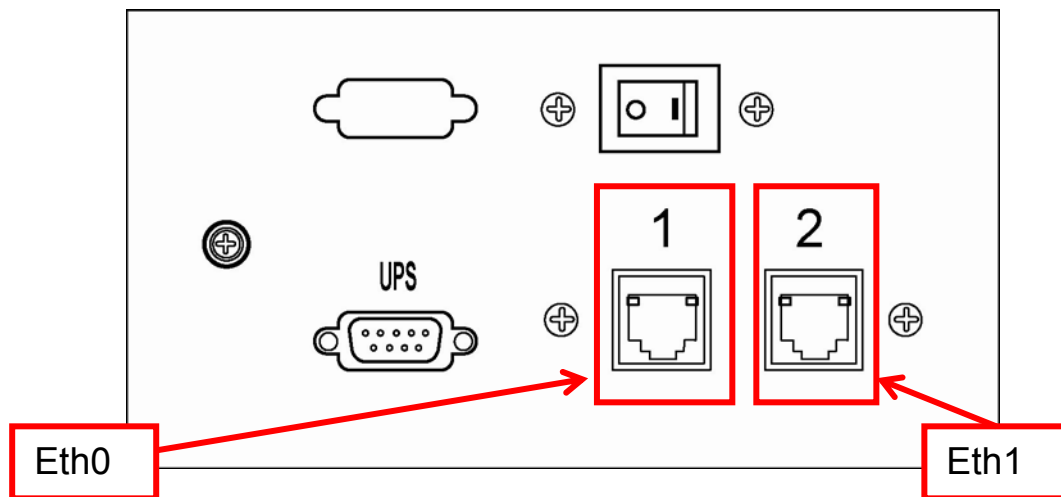


Figure 2-2 Connecting Ethernet Port

To properly shutdown the system:

1. Select “Shut Down” from the menu on system LCD display.
2. Alternatively, select “Shut Down” from the administrative page.
3. Immediately turn off the power. Do not exceed 4 seconds. NAS System supports manual shutdown by using the “Shutdown on Power Push Button.”



When the system is in normal operation, do not turn off the power directly from the power source. Otherwise, data that are in the process of been written on the NAS might be lost and can not be recovered. For more details, please refer to section 4-8, system menu.

2-4 System Bootup—Self Configuration Test

After the power is turned on, System performs Self Configuration Test automatically. These self tests include CPU Type, CPU Fan, System Memory Size, Network Control Chip, and Hard Disk Control Chip data, to ensure normal system operation.

2-5 IP Address

Most system configuration settings can be set via system administrator control. This administrative control is web browser based. To access the system administrator control, you must know the IP Address of Orion NAS System.

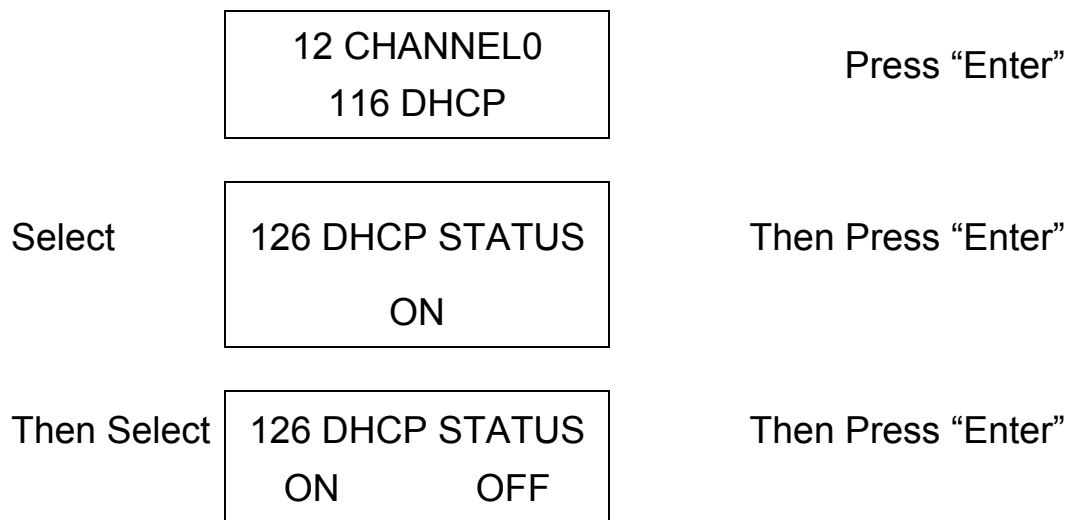
Upon first-time bootup, Orion NAS System initiates eth 0 with DHCP/BOOTP to select all available IP Addresses in network. If manual input of an IP Address is required, acquire the IP Address from the system administrator. And then manually type the IP Address via the front control panel.



Upon first-time bootup, Orion NAS System initiates DHCP/BOOTP to select all available IP Addresses in network. If other means of IP Address selection is required, you can manually type an IP Address via LCD front control panel.

There are three different modes you can choose from (Bond 0, eth 0 and eth 1). In menu here we will take eth 0 as example below. Follow these steps and manually set the IP Address through the front control panel:

1. Press “Enter” key.
2. Input the administrative password and press “Enter” key. (The default password of this product is eight zeros (00000000). Note: You may press the “ESC” key to exit at any time). After entering the eighth zero, press the “ESC” key to finish and it will take you to the next step.
3. If LAN supports DHCP Server, use automatic detection to complete configuration.
4. Steps to disable DHCP.



Use the “▲” up and “▼” down arrows to select “OFF,” then press “Enter.”

5. Use the “▲” up and “▼” down arrows to select menu items. Select “1Network” and press “Enter” to confirm.
6. Select “12 Channel 0” and press “Enter” key to confirm.
7. Press “Enter” key again to verify “Channel 0 Status”. Results are displayed on the LCD front control panel.

121 CH0 Status
ON CONNECTED

Chapter 2

When a connection is made, a red light just above the left front panel is visible on the NAS unit. If this light is not visible then the connection has failed.

8. If the status is “DISCONNECTED,” the connection to Ethernet is not successful. Please check if the network cable is connected correctly. After verification, press “Enter” key to check “Channel 0 Status” again. Make sure the connection to network is successful.



Ethernet status won't be updated automatically! Press “Enter” key to check “Channel 0 Status” again and make sure the connection to network is successful.

9. Setup IP address Manually
10. Use the “▲” up and “▼” down arrows to select “112 CH0 IP ADDR.” Press “Enter” to set the IP Address.
11. Every time you type an IP digit, press “Enter” once before punching in another digit.
12. Use the “▲” up and “▼” down arrows to select “123CH0 NetMask.” Press “Enter” to set the Sub-network Mask IP Address. (Optional)
13. Type the Sub-network Mask IP Address. (If not supplied, system will set to default)
14. Use the “▲” up and “▼” down arrows to select “124CH0 GateWay.” Press “Enter” to set the Gateway IP Address. (Optional)
15. Type the Gateway IP Address. (If not supplied, system will set to default).
16. Press “ESC” key 4 times continuously to exit the main menu. At this moment, the LCD front control panel will display all relevant information, such as CPU temperature, fan speed, and the set IP address, etc.

2-6 Connecting to a Network

When all system configurations are set and connected to the network, type the IP Address via an internet browser (e.g. Internet Explorer) to access the system administrative web page and complete all administrative tasks.

2-7 Administrator Login

Figure 2-3 shows the login screen of Orion NAS System network HDD array after the IP address has been entered on the Web browser address line. The table below shows the initial factory default for the administrator gain access to the system.



Default administrator password

User Name	nasroot
Password	00000000

After typing in the administrator user name and password, press “Go” symbol on the login page or just simply hit “enter/return” key on Keyboard.



Figure 2-3 Orion NAS System Login Screen

2-8 System Information Screen

Figure 2-4 shows the display screen after logging in as the administrator. There are 2 parts in the screen:

- 1 System Information area: The configuration area for administrator. Including: changing settings, statistics records, shared data, and storage space, etc.
- 2 Menu area: Select desired tasks to perform from menu area.

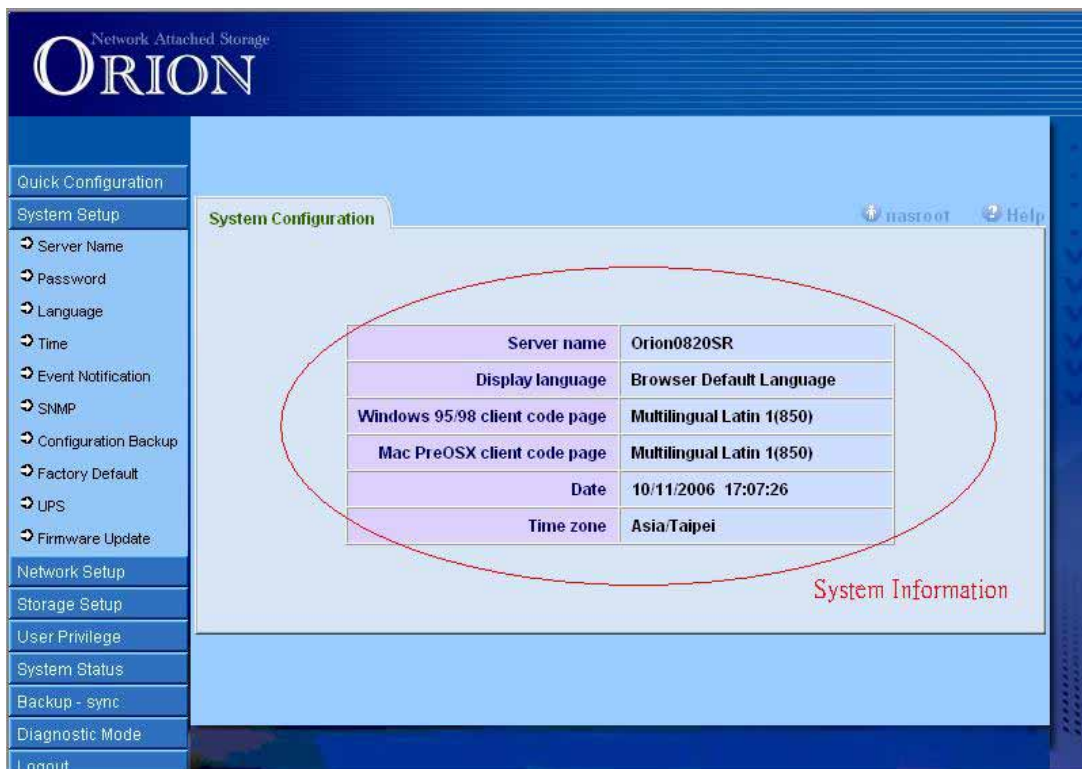


Figure 2-4 Display after Logged in as Administrator

2-9 Quick Configuration

Figure 2-5 shows the Quick Configuration screen. Initial configurations may be set through this screen.

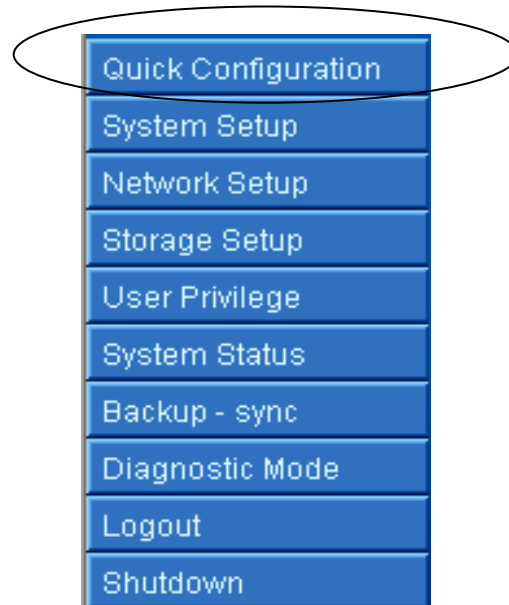


Figure 2-5 Quick Configuration Screen

2-10 Server Name

The server name must be unique. If there are other servers in the network environment, please make sure the name is not repeated. Length of the name should not exceed 14 characters, and should not contain any space.

Figure 2-6 shows the server name settings. After typing in the name, there are 2 more options available:

1. Update and Next: System will store settings and go to the next setting screen.
2. Next: System will ignore any changes and go directly to the next setting screen.



Figure 2-6 Server Name

Type in the server name and click “Update and Next.” System stores new settings and returns the updated status. Confirm that the system prompts “Changed Successfully” is showing and then click “Next” button.

Figure 2-7 shows the system prompt information.



Figure 2-7 System Prompt Information

2-11 Date, Time, and Region

Figure 2-8 shows the settings of date, time, and region as well as NTP option.

If your location is not in the list, please select a city that is the nearest and within the same time zone.

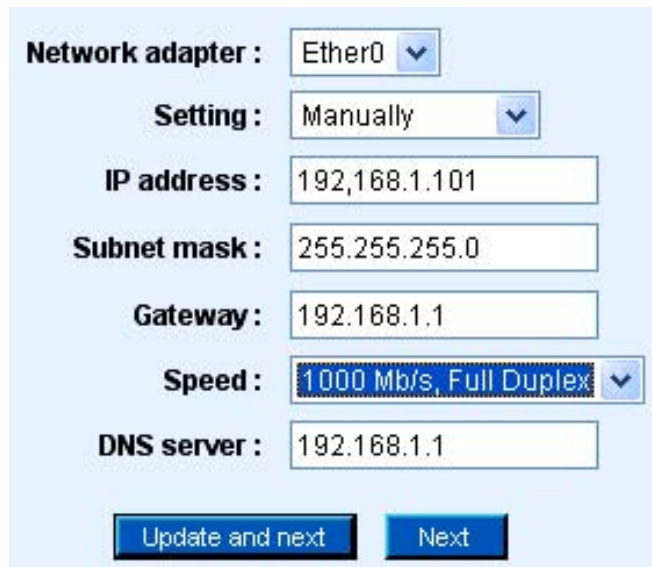
The image shows a software configuration window with a light blue background. It contains several input fields and buttons. The 'Date' field has three spinners showing '10', '11', and '2006'. The 'Time' field has three spinners showing '17', '19', and '17'. The 'Area' field is a dropdown menu with 'Asia' selected. The 'City' field is a dropdown menu with 'Taipei' selected. The 'NTP Server' section has two radio buttons: 'Yes' (which is selected) and 'Manually'. Below the radio buttons is a text box containing 'time.nist.gov'. At the bottom of the window are two buttons: 'Update and next' and 'Next'.

Figure 2-8 Settings of Date, Time, and Region

When settings are done, click “Update and Next” to proceed to the next screen.

2-12 Network Settings

Figure 2-9 shows the settings screen of network port. From the pull-down menu, you may select the system IP address as “DHCP/BOOTP Obtain an IP Address Automatically” or “Manual.”



Network adapter : Ether0 ▾

Setting : Manually ▾

IP address : 192.168.1.101

Subnet mask : 255.255.255.0

Gateway : 192.168.1.1

Speed : 1000 Mb/s, Full Duplex ▾

DNS server : 192.168.1.1

Update and next Next

Figure 2-9 Settings of Network Port

The system will automatically select a physical network port that is available and auto-sense the speed of the network. If manual setting is desired, select “Manual” from the pull-down menu, instead of “DHCP/BOOTP Obtain an IP Address Automatically.”

When settings are done, click “Reboot” to proceed to the next screen and restart the NAS system using the changes. Clicking “OK” button saves the changes and exit this screen allowing the administrator to continue making other changes. Only when the system is rebooted will any changes be activated.



Figure 2-10 Network Device Setup Successfully

2-13 Adding Storage Volume

Upon first-time system configuration, there will be no existing storage volume. Figure 2-11 shows the system prompt.



Figure 2-11 No Storage Volume Existed in System

Before setting the system as an array storage system, you have to setup at least one storage volume. Click “Add” button, and go to Storage Volume Settings screen.

2-13-1 Storage Volume Settings

The system supports multiple storage volumes and each storage volume can be set as JBOD, RAID-0, 1, 3 or 5.

A storage volume itself can be a single HDD (JBOD mode) without any RAID support. A storage volume (RAID 1, 3 or 5) may be assigned a backup HDD, to automatically replace any damaged HDD in storage volume.

If the number of unused HDD is less than the number required by a specific storage volume option, then the storage volume option will not be available. The following figure shows minimum required number of HDD for all options.

Storage Volume Type	Minimum HDD Number Required
Single HDD (No array)	1
RAID-0 (Disk Striping)	2
RAID-1 (Disk Mirroring)	2
RAID-3 (Disk Striping with parity)	3
RAID-5 (Disk Striping with parity)	3

2-13-2 Single HDD Storage Volume:

This mode does not have array support and only supports single HDD. Figure 2-12 shows the screen when Single HDD Option is used.

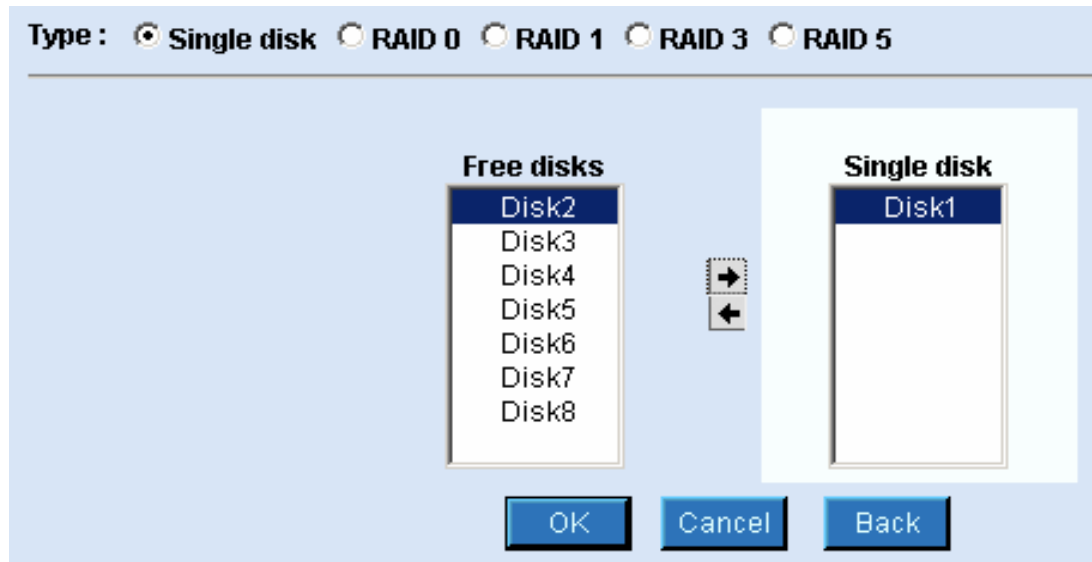


Figure 2-12 Single HDD Storage Volume

On the left of screen, lists all HDD that are installed in the system but not configured as storage volume yet.

Select desired HDD and click the "➔" right arrow button to make it a single HDD storage volume. If you change your mind, click the "⬅" left arrow button to put it back to the unused HDD list.

When settings are done, click the "OK" button.

To cancel the single HDD storage volume settings, click "Cancel" or "Back."

2-13-3 RAID-0 Storage Volume—Disk Striping

Figure 2-13 shows the screen when RAID-0 Option is used.

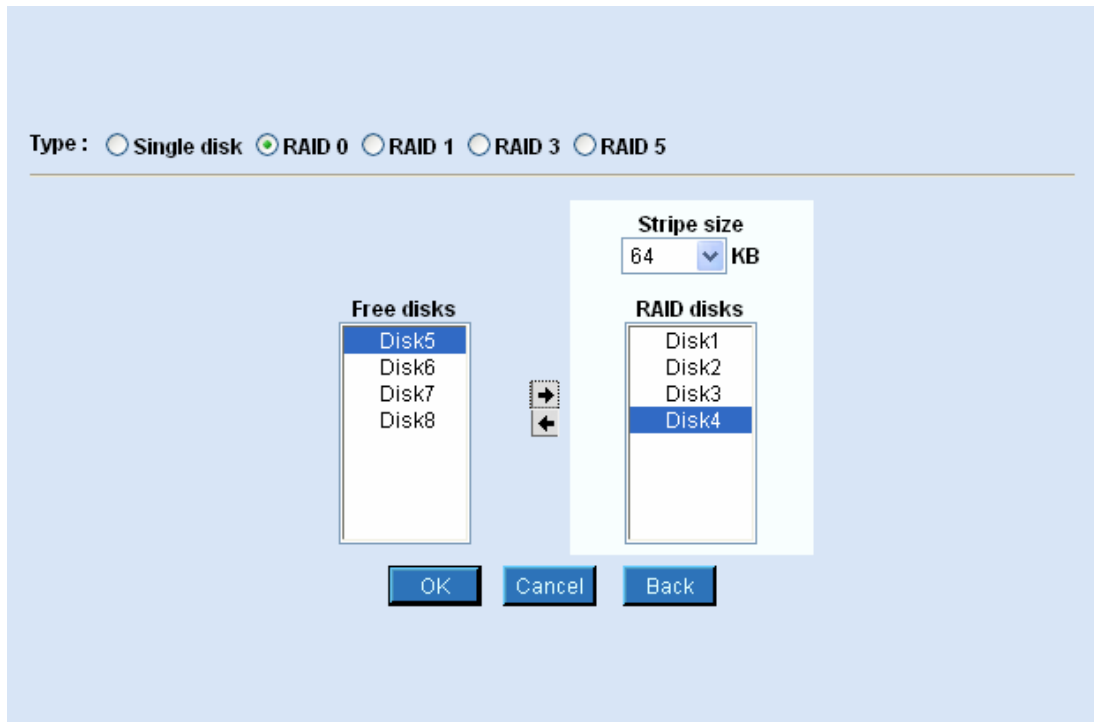


Figure 2-13 RAID-0 Storage Volume

1. Available HDD

A list of all HDD that are installed in the system but not configured as storage volume yet.

2. RAID HDD

Select desired HDD and click the “→” right arrow button to add it into the RAID-0 storage volume. If you change your mind, click the “←” left arrow button to put it back to the unused HDD list.

3. Stripe Size

Maximize the performance of sequential file in the storage volume. There is no need to change the settings in general, unless the advanced administrator has special file storage layout in the storage volume.

Chapter 2

4. When settings are done, click “OK” button.



A single HDD can not support RAID-0. It requires at least 2 HDD.



RAID-0 does not have any safety features, such as “Data Synchronization” and “Automatic Data Recovery.”

2-13-4 RAID-1 Storage Volume—Disk Mirroring

Figure 2-14 shows the screen when RAID-1 Option is used.

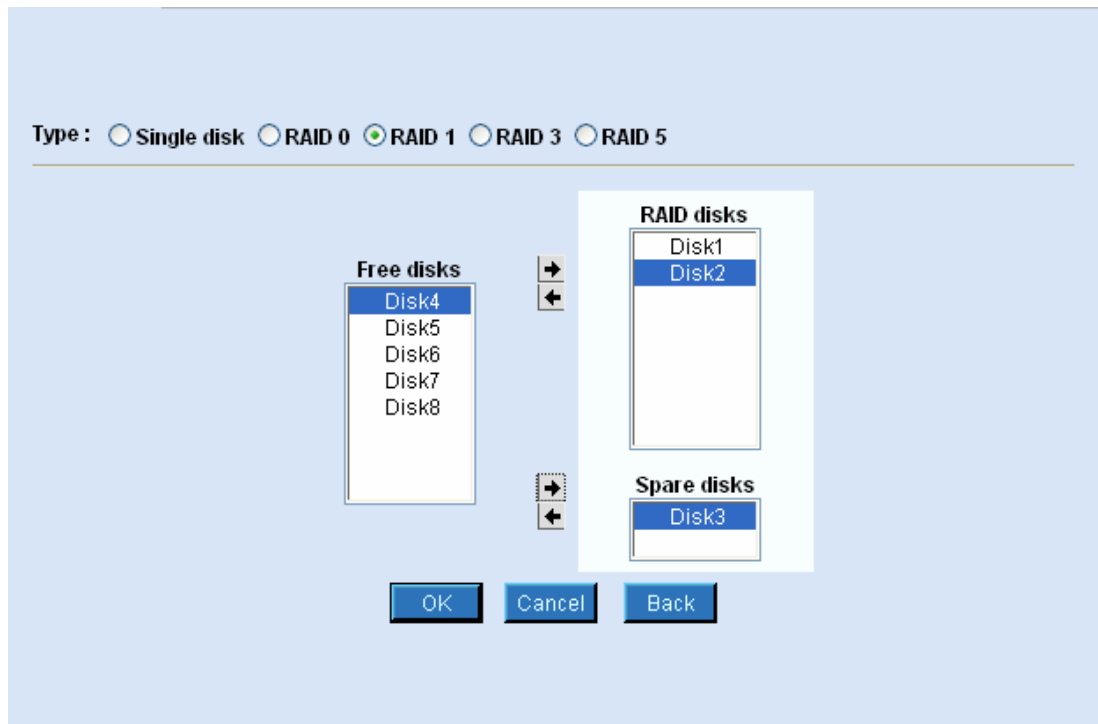


Figure 2-14 RAID-1 Storage Volume

1. Available HDD

A list of all HDD that are installed in the system but not configured as storage volume yet.

2. RAID HDD

A list of all HDD that are already added into this storage volume. To add a HDD, click the “→” right arrow button to add it into the RAID-1 storage volume.

3. Backup HDD

Shows the designated replacement HDD in the storage volume. (The backup HDD for any damaged HDD)



RAID-1 supports 2 or 4 HDD.

2-13-5 RAID-3 Storage Volume—Disk Striping with Parity

This RAID-3 feature is unique to the Orion family of NAS and is the first to be available in this type of product. While RAID-3 is similar to RAID-5, this feature is different in that it does not have a stripe size option. RAID-3 is most efficient for single user who is working with large files. When multiple users require access to the NAS and smaller file sizes, it is more efficient to utilize a RAID-5 system.

Figure 2-15 shows the screen when RAID-3 Option is used.

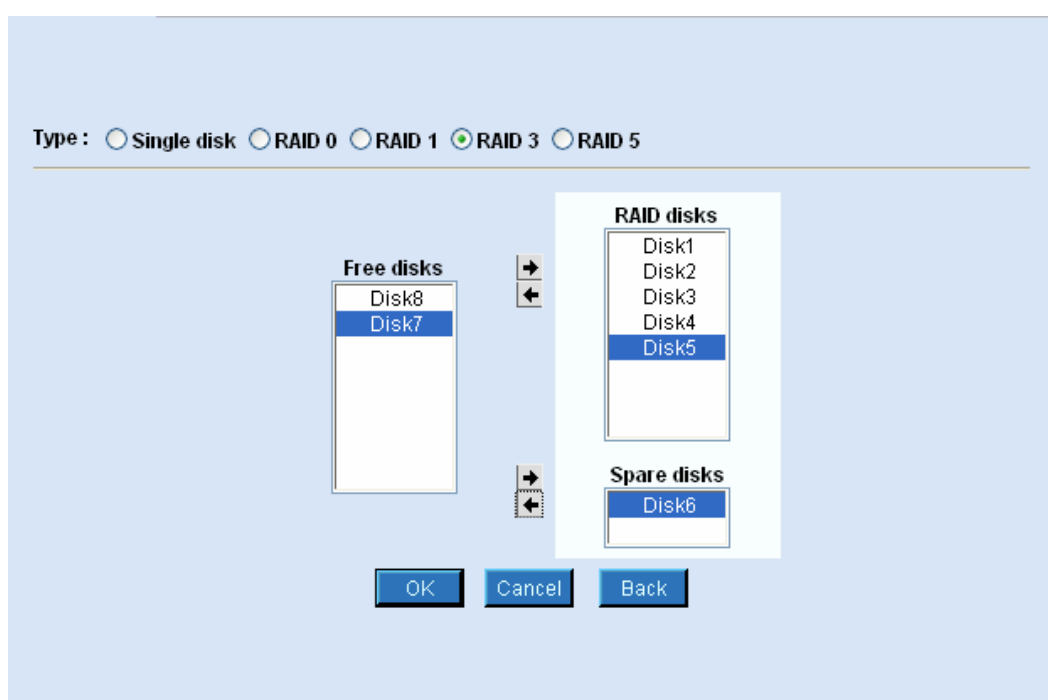


Figure 2-15 RAID-3 Storage Volume

1. Available HDD

A list of all HDD that are installed in the system but not configured as storage volume yet.

2. RAID HDD

A list of all HDD that are already added into the storage volume. To add a HDD, click the “→” right arrow button to add it into the RAID-5 storage volume.

3. Backup HDD

Shows the designated replacement HDD in the storage volume.
(The backup HDD for a damaged HDD)

When settings are done, click the “OK” button. If you change your mind, click the “←” left arrow button to put it back to the unused HDD list.

2-13-6 RAID-5 Storage Volume—Disk Striping with Distributed Parity

Figure 2-16 shows the screen when RAID-5 Option is used.

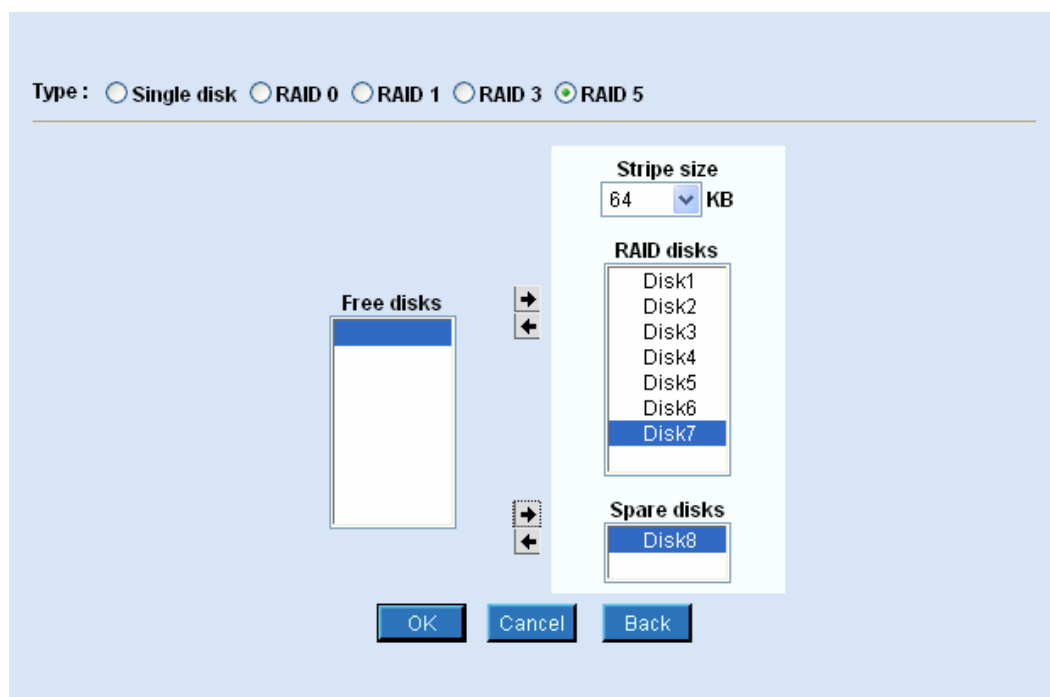


Figure 2-16 RAID-5 Storage Volume

1. Available HDD

A list of all HDD those are installed in the system but not configured as storage volume yet.

2. RAID HDD

A list of all HDD those are already added into the storage volume. To add a HDD, click the “→” right arrow button to add it into the RAID-5 storage volume.

3. Backup HDD

Shows the designated replacement HDD in the storage volume. (The backup HDD for a damaged HDD)

4. Stripe Size: Please refer to 2-13-3.

When settings are done, click the “OK” button. If you change your mind, click the “←” left arrow button to put it back to the unused HDD list.

2-13-7 Building Up Storage Volume

Figure 2-17 shows the progress screen, when the system is building up a storage volume.



Name	Type	Capacity(MB)	Used(MB)	Disks	Status
Volume1	RAID 5	218877	1	1,2,3,4	Inuse
Volume2	RAID 5	218877	0	5,6,7,8	RAID sync(1.4%)

Figure 2-17 Storage Volume Status Table



System is setting up file system and building up storage volume. Please wait until it reaches 100%, as shown in figure 2-17.

2-13-8 Multiple Storage Volumes

Figure 2-18 shows a list of all storage volumes that are established in the system.



(Click on the row of the table to select the volume)

Name	Type	Capacity(MB)	Used(MB)	Disks	Status
Volume1	RAID 1	74802	0	1,2	RAID sync(2.8%)
Volume2	Single disk	72959	0	3	Inuse

Buttons: Add, Delete, Modify, Format, Global Spares

Figure 2-18 List Of All Storage Volumes

The system supports multiple storage volumes. To add a new storage volume, simply click on “Add” button and complete its settings. When settings are done, click on “Next” to proceed to next screen.



RAID-3, 5 requires a minimum of 3 HDD.

RAID-1, 3, 5 allows only one disconnected or damaged HDD. If 2 HDD are disconnected, HDD array will be damaged.



After the system has initiated the RAID build process, you may set the initialization speed to increase RAID Synchronization to save time, as shown in figure 2-19.

To change the speed of the initial Build up or rebuilding, select the storage volume and it will be highlighted in yellow. Click on the Modify Button and you may change rebuilding speed or backup HDD of the system, as shown in figure 2-19. This feature is only available when in the initial or rebuilding process.

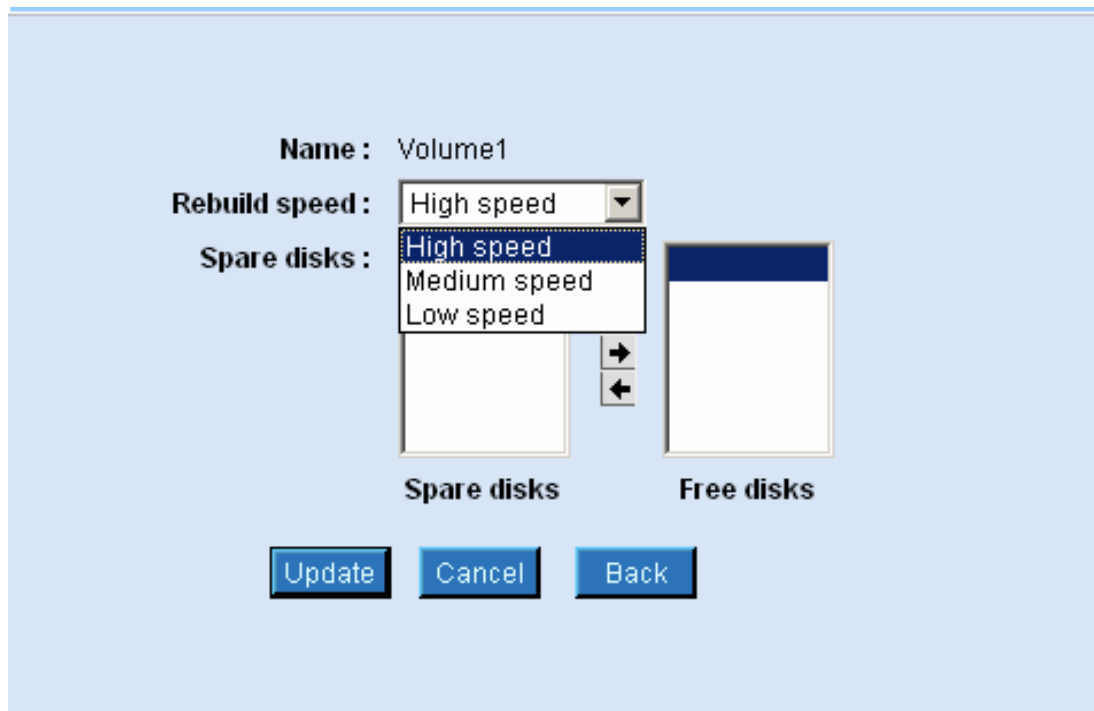


Figure 2-19 Modifying Storage Volume

2-14 Enabling Windows Network Service

The last item in the Configuration process is Network Setup. Click on the Network Setup on the Menu area. This will display the set up features for the different type of clients. The example below is to set up Windows clients. Click on the Windows tab and it will display the screen for setting Windows Clients “Enable Windows Network Settings.” The settings screen is shown in figure 2-20.

Windows Network nastroot Help

Status : ☒ Enable ☐ Disable

Server name : Orion0020AD

Security level : domain level

Domain : workgroup

PDC name :

PDC administrator name :

PDC administrator password :

uid range (min-max) : 40000 --- 60000

gid range (min-max) : 40000 --- 60000

Server description : Orion

WINS server IP :

Update Cancel

Figure 2-20 Windows Network Settings

Figure 2-21 shows the pop-up screen after selecting “Update” button.



Figure 2-21 Windows Network Settings Updated Successfully

The system supports Windows SMB network communication protocol, to enable data sharing between clients with Windows related operating platforms. This page provides settings for related parameters.



If Windows Network Service is not being used in the system, select disable for this option. Then select a desired network type from "Network Setup".

1. Status

To enable Windows network service, please select “Enable” and vice versa

2. Security Level

Select any of the following security levels for applying to the system:

Chapter 2

A. User Level

All system user accounts must be created within the system. The system administrator must manually create each user and assign it a password, as well as set a privilege level for accessing shared folders in a storage volume.

Workgroup	Input a workgroup name in this field. The workgroup is the one in which you would like to add the system in the Windows network environment.
Server Description	Input a description details to appear this NAS server under selected workgroup.



The screenshot shows a 'Windows Network' configuration window. At the top, there is a tab labeled 'Windows Network' and a user icon labeled 'nasroot' with a 'Help' button. Below the tab, there is a 'Status' section with two radio buttons: 'Enable' (selected) and 'Disable'. A horizontal line separates this from the configuration fields. The fields are: 'Server name' with the value 'Orion820SR-1', 'Security level' with a dropdown menu showing 'user level', 'Workgroup' with the value 'workgroup', 'Server description' with the value 'Orion 820SR - 1', and 'WINS server IP' with an empty text box. At the bottom, there are two buttons: 'Update' and 'Cancel'.

Figure 2-22



Please input the short Domain name only for associated field. For example if the full domain name is "Orion.com" then "Orion" will be the only input required.

- B. Domain Level: If the network environment is to access user information via a Windows NT Server **Primary Domain Controller** (PDC), the system will automatically obtain the user names and passwords from the PDC. As shown in figure 2-23, the pop-up screen after setting the security level as “Domain Level” and clicking the “Update” button.

Domain	Input the selected Domain name here.
PDC Name	Input the PDC name for selected domain.
PDC Administrator Name	Input the domain's administrator name here.
PDC Administrator password	Input the domain administrator's password.
uid range	The user UIDs used in 820SR for Domain users to tell from those ones created locally.
gid range	The group GIDs used in 820SR for Domain users to tell from those ones created locally.
Server Description	Input a description details to appear this NAS server under selected Domain.

Windows Network nasroot Help

Status : ☒ Enable ☐ Disable

Server name : Orion820SR-1

Security level : domain level ▾

Domain : workgroup

PDC name :

PDC administrator name :

PDC administrator password :

uid range (min-max) : 40000 --- 60000

gid range (min-max) : 40000 --- 60000

Server description : Orion 820SR - 1

WINS server IP :

Update Cancel

Figure 2-23

- C. **ADS Level:** If the network environment is to access user information via a Windows Server 2000 or Windows Server 2003 **Active Directory Service** (ADS), the system will automatically obtain the user names and passwords from selected DC. As shown in figure 2-24, the pop-up screen after setting the security level as “ADS Level” and clicking the “Update” button.

Domain	Input the selected AD Domain name here.
ADDC Administrator Name	Input the ADDC administrator name.
ADDC Administrator password	Input the ADDC administrator's password.
uid range	The user UIDs used in 820SR for Domain users to tell from those ones created locally.
gid range	The group GIDs used in 820SR for Domain users to tell from those ones created locally.
Server Description	Input a description details to appear this NAS server under selected ADDC.



Figure 2-24 Domain or ADS Level Settings

3. WINS server IP

Input the WINS server IP here if it is applicable.

4. Complete Configuration Process

When Windows Security Level settings are done, click “Update and Next” button to complete all settings in the menu.

5. Other Network Clients

Refer section 3-5-3 for Unix Clients, section 3-5-4 for Apple Clients, section 3-5-5 for FTP clients.

The system configuration is done now and is ready to serve online as a network attached storage device with redundant HDD array.

Chapter 3

Using Administrative Tools For Administrator

Orion NAS System administrative tools for administrator can be accessed completely via web browser. Its powerful menu allows the administrator to complete system configuration settings and manage the system easily.

Using “System Menu” to set and control the system is covered in this chapter.

3-1 Login

Enter the IP Address via a web browser and get into the configuration settings of Orion NAS System network HDD array.

To look up the IP Address of the system, the administrator can directly view the displayed contents of the system control panel, or use the complementary search software of the system to acquire it.

The default user name and password of the server administrator.

User Name	nasroot
Password	00000000 (8 consecutive 0's)



Password Length: Should not exceed 14 characters, and may include English alphabet. Password is case-sensitive. The entered password must be identical to the original setting, or you will not be able to login to the system.

3-2 Administrator Login

After a user is logged into Orion NAS System as the administrator, he/she will have full privilege over the network HDD array.

Figure 3-1 shows the system option menus that are configurable by the administrator.



Figure 3-1 Administrator System Option Menus

3-3 Quick Configuration

The system administrator can set primary parameters of Orion NAS System by using this menu, hence enable basic system operations. Each setting is enabled by hitting the update & next button. If no changes are required, then step to the next screen by hitting the “next” button. For more details about settings, please refer to chapter 2 and related chapters.

3-4 System Setups

This menu is used to change related parameter settings. Figure 3-2 is the overview of System Configuration.

Server name	Orion00079A
Display language	Browser Default Language
Windows 95/98 client code page	Multilingual Latin 1(850)
Mac PreOSX client code page	Multilingual Latin 1(850)
Date	10/11/2006 18:07:27
Time zone	Asia/Taipei

Figure 3-2 System Settings Overview

The system settings menu is as shown in figure 3-3.



Figure 3-3 Options of System Settings Menu

3-4-1 Server Name

Figure 3-4 shows the server name setting screen.



Figure 3-4 Server Name Setting

3-4-2 Password

It is allowed the administrator to change the password for entering system administrative page. Please refer to figure 3-5.



Figure 3-5 Server Password Setting

To change system password, a user must type exactly the original system password. And then type the same new password twice to successfully change the system login password.



Password Length: Should not exceed 14 characters, and may include English alphabet. Password is case-sensitive. The entered password must be identical to the original setting, or you will not be able to login to the system.

3-4-3 Language

The system language menu option has offered 6 different choices; Web-browser default, English, Traditional Chinese, Simplified Chinese and Japanese and Korea language.)

The administrator should set the language option as the same language as the one currently used by OS.



Figure 3-6 Language Setting Screen

3-4-4 Time Setting

Please refer to section 2-11 of the manual to set time, date, region, and city.

3-4-5 System Event Reports

Figure 3-7 shows event reports option. The administrator may set up to 3 e-mail addresses here by using this option. When any system event occurs, it will automatically send a warning e-mail message to all 3 e-mail addresses.

The screenshot shows the 'Event Notification' window. At the top, there are two radio buttons: 'BEEP status' (selected) and 'SMTP status'. Below this, there is a section for 'BEEP status' with 'Enable' (selected) and 'Disable' radio buttons. The main area contains a table with four columns: Temperature, Fan, Disk, and Volume. The 'Temperature' column lists 'CPU'. The 'Fan' column lists 'CPU Fan'. The 'Disk' column lists 'Disk1' through 'Disk8'. The 'Volume' column lists 'Volume1'. At the bottom, there are 'Update' and 'Cancel' buttons.

Temperature	Fan	Disk	Volume
CPU	CPU Fan	Disk1 Disk2 Disk3 Disk4 Disk5 Disk6 Disk7 Disk8	Volume1

Figure 3-7 Event Reports Screen

To use the event reports option, the followings must be set first:

1. BEEP Status

By default, “Enable” option is selected. When event occurs, the system sends a “beep” to notify the administrator.

2. SMTP Status

To enable automatic message delivery, select “Enable” option.

The screenshot shows a web-based configuration window titled "Event Notification". At the top, there are two tabs: "BEEP status" and "SMTP status", with "SMTP status" being the active tab. Below the tabs, the "SMTP status" is set to "Enable" (indicated by a selected radio button). There are five text input fields: "Mail server", "Sender's e-mail address" (which contains the text "<Default>"), "Administrator's e-mail address 1", "Administrator's e-mail address 2", and "Administrator's e-mail address 3". Below these fields, there is a "Send a testing e-mail" option with "Yes" and "No" radio buttons, where "No" is selected. At the bottom of the window, there are two buttons: "Update" and "Cancel".

Figure 3-8 SMTP Status Settings

If “Sender E-Mail Address” is not set and “Default” is used, messages will be transferred by MaxTronic E-Mail to “E-Mail Address 1~3 of The Administrator.” It is recommended to change “Default” to the E-Mail Address of The MIS Administrator.

3. Mail Server Address

Enter the IP Address of SMTP server and the mail server name.

4. E-Mail Address 1~3 of The Administrator

Enter e-mail addresses of the administrator here. The system will automatically send out system messages to the e-mail addresses that you have set.

5. Send a Test E-Mail

If “Yes” is selected, the system sends a “test” e-mail to the configured e-mail address(es) after “Update” button is clicked to make sure proper delivery of report messages.

The image shows a web-based configuration window titled "Event Notification". At the top, there are two tabs: "BEEP status" and "SMTP status", with "SMTP status" being the active tab. Below the tabs, there are two radio buttons: "Enable" (selected) and "Disable". Underneath, there are several text input fields: "Mail server" with the value "192.168.1.253", "Sender's e-mail address" with "mis@maxtronic.com.tw", "Administrator's e-mail address 1" with "elvis@maxtronic.com.tw", "Administrator's e-mail address 2" with "maxmei@maxtronic.com.tw", and "Administrator's e-mail address 3" which is empty. Below these fields is a "Send a testing e-mail:" label with "Yes" (selected) and "No" radio buttons. At the bottom of the window are two buttons: "Update" and "Cancel".

Figure 3-9 Send a Testing E-Mail

After select “Yes” for “Send a Test E-Mail,” click “Update.” A test e-mail will be sent to the configured e-mail address(es).



Figure 3-10 Testing E-Mail Sent Screen

3-4-6 SNMP Settings

Figure 3-11 shows the SNMP Settings screen.

The image shows a web-based configuration interface for SNMP settings. At the top, there is a section for 'SNMP status' with two radio buttons: 'Enable' and 'Disable'. The 'Disable' button is selected. Below this, there is a section for 'Authentication alert' with two radio buttons: 'Enable' and 'Disable'. The 'Disable' button is selected. Below this, there are five text input fields: 'Community', 'Trap community', 'IP address of trap destination', 'Administrator name', and 'NAS location'. At the bottom right, there are two buttons: 'Update' and 'Cancel'.

Figure 3-11 SNMP Settings

To enable SNMP, the following parameters are required:

1. SNMP Status

To use SNMP function, set its status as “Enable.”

2. Authentication notice.

3. Community

Enter a NAS community name.

4. Trap Community

Enter a Trap Community name.

5. IP Address of Trap Community

The IP address of Trap Receiving end to receive all notifications.

6. System Administrator Name

Enter a SNMP system administrator name of the system. The name does not have to be the same as the system administrator.

7. NAS Location

Enter an easily identifiable NAS location.

3-4-7 System Configuration Backup

As shown in figure 3-12, the administrator is allowed to backup or restore configuration settings of the system.

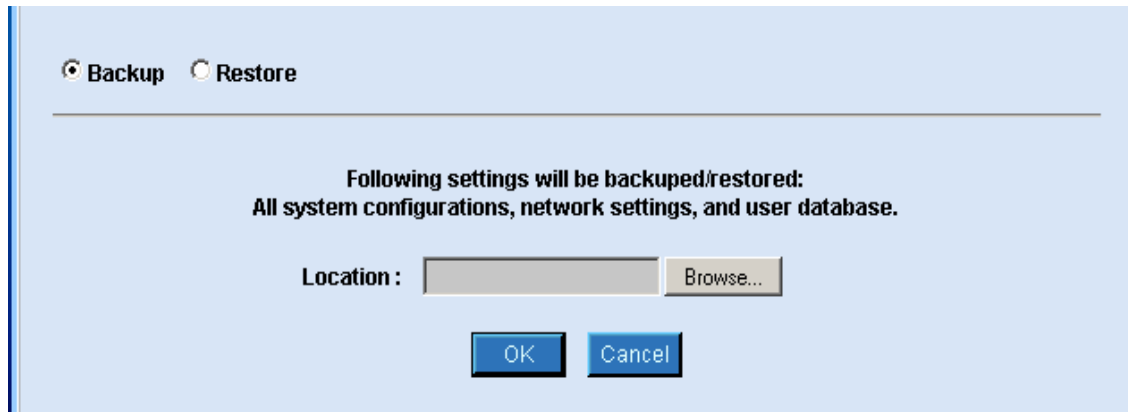


Figure 3-12 Backup and Recovery Of System Settings

The administrator may make backup files or restore previous configuration settings. These include:

1. Contents of Raid Configuration
2. Settings of NFS
3. Settings of Windows SMB
4. Settings of Apple Talk
5. User Database (including user name, password, quota, and group)



When the system administrator has completed all settings and layouts, it is strongly recommended to make a backup and store it for emergency situations.

When “OK” is clicked (figure 3-12), the system prompts a dialog box, as shown in figure 3-13, and asks for the administrator password.



Figure 3-13 Enter Password

Enter the “User Name” of administrator in associated field, and enter the password in “Password” field to complete backup (or restore) system settings. This will now save a backup file to the HDD of the computer in which the administrator is using to access the NAS. This is usually in the form of “NameofNAS_config.bin”

When backing up settings of the system, a directory must be specified to save backup files. When restoring system settings, the directory must be provided to access backup files. This is accessed by selecting the restore button and hitting the browse button. When the file is located, selecting the file and click OK. This will show up on the location window. Clicking OK button will restore the previous configuration.

3-4-8 Restore Default Settings

Figure 3-14 shows the menu to restore default settings.

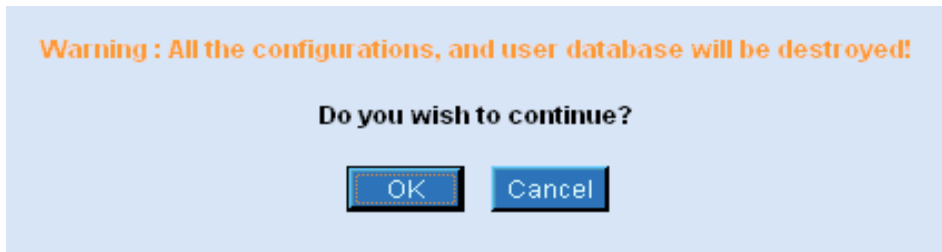


Figure 3-14 Restore Default Settings

This option reverts to the factory default settings of the system. Before proceeding with this option, please be sure to perform backup of the configuration file. Otherwise, all settings (e.g., groups, users, user quotas, user privileges, network settings) will be erased and reset to default values. This will only happen if the drives are still installed. If the drives have been removed, this process will only refresh the NVRAM. This has the action of making the unit like a brand new system. When the drives are re-inserted, the configuration will be restored from the drives set. Otherwise, a restore function from a backup file is required.



All system settings, groups, users, user quotas and privileges will be erased.



Once this option is confirmed and executed, there is no way to retrieve any previous data except from a saved backup file

3-4-9 Using UPS for System

The UPS setting screen of the system is shown in figure 3-15.

UPS

UPS Watch : ☐ Yes ☒ No (Please also setup the following, when "Yes" is chosen.)

UPS Selection : Please select

Time to shutdown : 5 min

☐ Yes
(Shutdown automatically if remaining battery charge below 5% on UPS or battery runtime below 5 minutes on UPS.)

Detailed Watch :

Send message to connecting clients : ☐ Yes

Update Cancel

Figure 3-15 UPS settings

This page provides tools to configure the Orion 820SR to monitor UPS device.

- UPS Watch
This radio button group enables/disables UPS watch function of the system.
- UPS Selection
The system supports [APC Back-UPS ES 500(RS-232) and APC Smart UPS].
- Time to shutdown
If enable the UPS watch option, the default delay of shutdown is 5 minutes. Otherwise, the system will be shutdown immediately when a power loss has been detected.

- Detailed Watch

If this option has been set to "Yes", the system will shutdown automatically if remaining battery charge below 5% on UPS or battery runtime below 5 minutes on UPS.

- Send message to connecting clients

If this option has been set to "Yes", the system will send message to connecting clients when each power event has been detected.

- Update

The system saves all changes if this button is pressed.

- Cancel

The system skips all the modifications if this button is pressed.

3-4-10 System Firmware Upgrade

The firmware upgrade screen of the system is shown in figure 3-16.

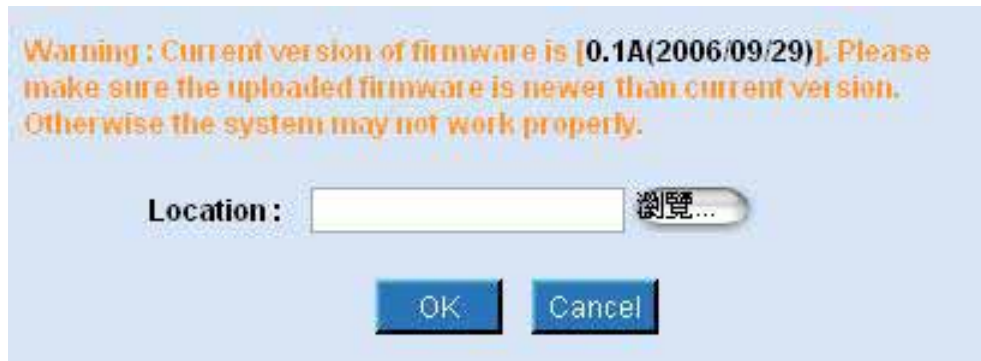


Figure 3-16 Firmware Upgrade

The administrator may acquire the latest version of firmware and save it in local HDD. By using this menu option, provide the file location to the system and complete firmware upgrade.

Please contact your local dealer regularly to acquire the latest version of firmware. The file will be in a form that looks like “1.01k-NAS System.bin”. Locate the file using the Browse button and click “OK”. It will update the firmware automatically and when completed, the unit will ask you to reboot.



If the settings are not saved, please check the battery on the Motherboard. It may require replacement

3-5 Network Settings

Network option menu is used to set related network parameters of the system. Figure 3-17 shows current network status of the system.

NIC	Ether0	Ether1
Attach	Yes	Yes
Setup	DHCP/BOOTP	
IP address	192.168.2.101	
Subnet mask	255.255.255.0	
Gateway	192.168.2.254	
DNS server	61.218.85.2	
MAC address	00:06:12:00:04:42	00:06:12:00:04:43
Current speed	10 Mb/s, Half Duplex	10 Mb/s, Half Duplex

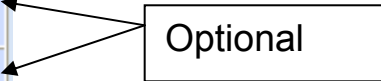


Figure 3-17: Network Status Display

The displayed contents of each network interface include:

- 1 Attach: Display connection status of network interface.
- 2 IP Setting Type: Display IP Setting Type of network interface, manual or automatic (using DHCP/BOOTP).
- 3 IP Address: Display the IP Address of network connection.
- 4 Subnet Mask: Display settings of sub network mask.
- 5 Gateway: Display settings of Gateway. (Optional)
- 6 DNS Server: In general, no need to set. (Optional)
- 7 MAC Address: Display the address of MAC layer.
- 8 Current Speed: Normally is 100~1,000 Mb/s, differentiated by Switch.

The contents of network settings menu is shown in figure 3-18.



Figure 3-18 Network Settings Menu

3-5-1 Basic Settings

A screenshot of a 'Network Basic Settings' dialog box. It has a light blue background. The settings are as follows: 'Network adapter' is set to 'Ether0' in a dropdown menu; 'Setting' is set to 'DHCP/BOOTP' in a dropdown menu; 'IP address', 'Subnet mask', and 'Gateway' are each in an empty text input field; 'Speed' is set to 'Auto' in a dropdown menu; and 'DNS server' is set to '211.23.195.114' in a text input field. At the bottom, there are two buttons: 'Update' and 'Cancel'.

Figure 3-19 Network Basic Settings

Figure 3-19 provides tools to setup the network of the system. Two physical network adapters are provided in this system, and a logical channel bonding interface is supported to bond 2 Ethernet port together.

<i>Network Adapter</i>	There are 2 physical Ethernet adapters (eth 0 and eth 1) and one logical channel bonding interface (Bonding) in this system. If " Bonding " is selected, channel bonding function is enabled that two physical Ethernet adapters are in bond, and the network bandwidth may be doubled; otherwise select a single adapter ("Ether0" or "Ether1") as your Ethernet interface.
<i>Setting</i>	This select list displays current setting of the selected [<i>Network Adapter</i>]. [<i>IP Address</i>], [<i>Subnet Mask</i>], and [<i>Gateway</i>] will be disabled if this select list is "DHCP/BOOTP". Otherwise, specify them manually in the following 3 text fields respectively.
<i>IP Address</i>	This text field displays current IP address of this system. If "DHCP/BOOTP" is selected in [<i>Setting</i>], the text field will be disabled and IP address is assigned automatically/dynamically depends on your network environment.
<i>Subnet Mask</i>	This text field displays current subnet mask of the system. If "DHCP/BOOTP" is selected in [<i>Setting</i>], the text field will be disabled and subnet mask is assigned automatically/dynamically depends on your network environment.
<i>Gateway</i>	This text field displays current gateway of this system. If "DHCP/BOOTP" is selected in [<i>Setting</i>], the text field will be disabled and gateway is assigned automatically/dynamically depends on your network environment.

Mode	The bonding mode. This select list exists only if the [Network Adapter] is "Bonding". There are 3 bonding mode: <i>Trunking</i> , <i>Fail-over</i> and <i>ALB</i> , where <i>Trunking</i> means the network bandwidth is doubled from bonding 2 physical Ethernet adapter, <i>Fail-over</i> stands for only one of the two physical adapters is in use and the other is a spare adapter and <i>ALB</i> can dynamically manage 2 physical Ethernet adapter, distribute the load among them by constantly analyzing the traffic flow from the server.
Speed	This select list displays current network speed. There are 6 possible speed: <i>Auto</i> , <i>10 Mb/s, Half Duplex</i> , <i>10 Mb/s, Full Duplex</i> , <i>100 Mb/s, Half Duplex</i> , <i>100 Mb/s, Full Duplex</i> , and <i>1000 Mb/s, Full Duplex</i> .
DNS Server	This text field displays the IP address of the DNS (Domain Name Server).
Update	The system saves all modifications if this button is pressed.
Cancel	The system skips all modifications if this button is pressed.

3-5-2 Windows

The system supports Windows SMB network communication protocol to enable data sharing between clients with Windows related operating platforms. Please refer to section 2-14 for related parameter settings.

3-5-3 Unix

The system supports UNIX compatible operating platforms to enable data sharing between clients with NFS communication protocol. This page provides related parameter settings and is shown in figure 3-20.

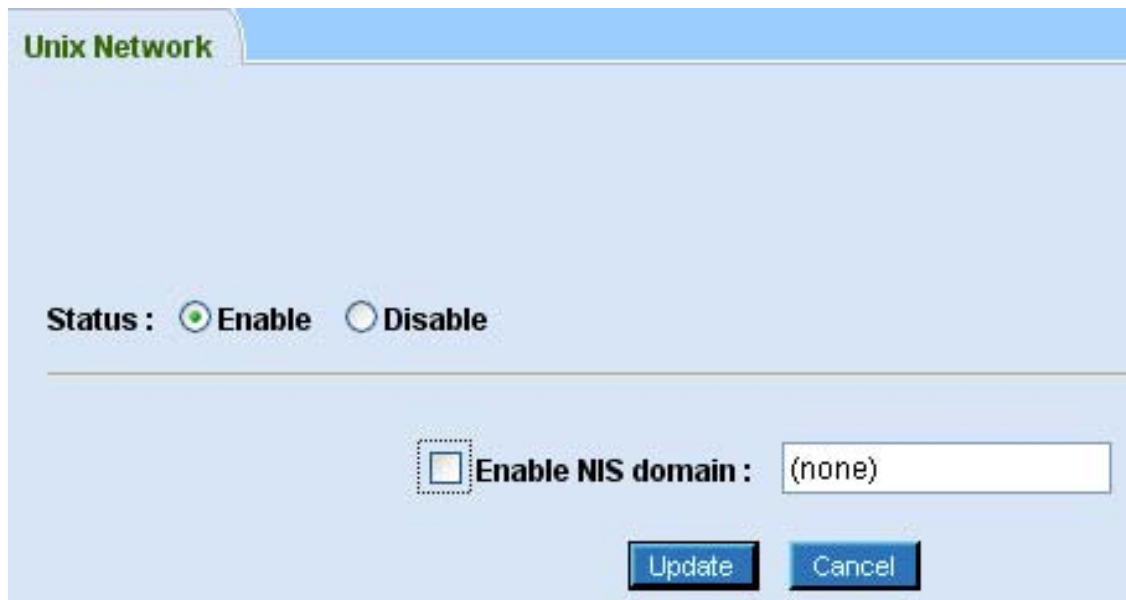
The screenshot shows a window titled "Unix Network" with a light blue background. At the top, there is a tab labeled "Unix Network". Below the tab, the status is set to "Enable" with a selected radio button, and "Disable" is unselected. A horizontal line separates the status section from the "Enable NIS domain" section. In this section, there is a checkbox labeled "Enable NIS domain" which is currently unchecked. To the right of the checkbox is a text input field containing the text "(none)". At the bottom right of the window, there are two buttons: "Update" and "Cancel".

Figure 3-20 Enable UNIX Compatible Network Service

The system provides NIS Client Service to allow itself to be added into the NIS domain. Check the “Enable NIS domain” box to enable it and enter NIS function parameter name. When completed, select “Update” button to save the changes. Select “Cancel” to disregard any changes made.

Select “Share Setup” of “Storage Setup” to make share folder available to Unix/Linux clients as shown in figure 3-21.

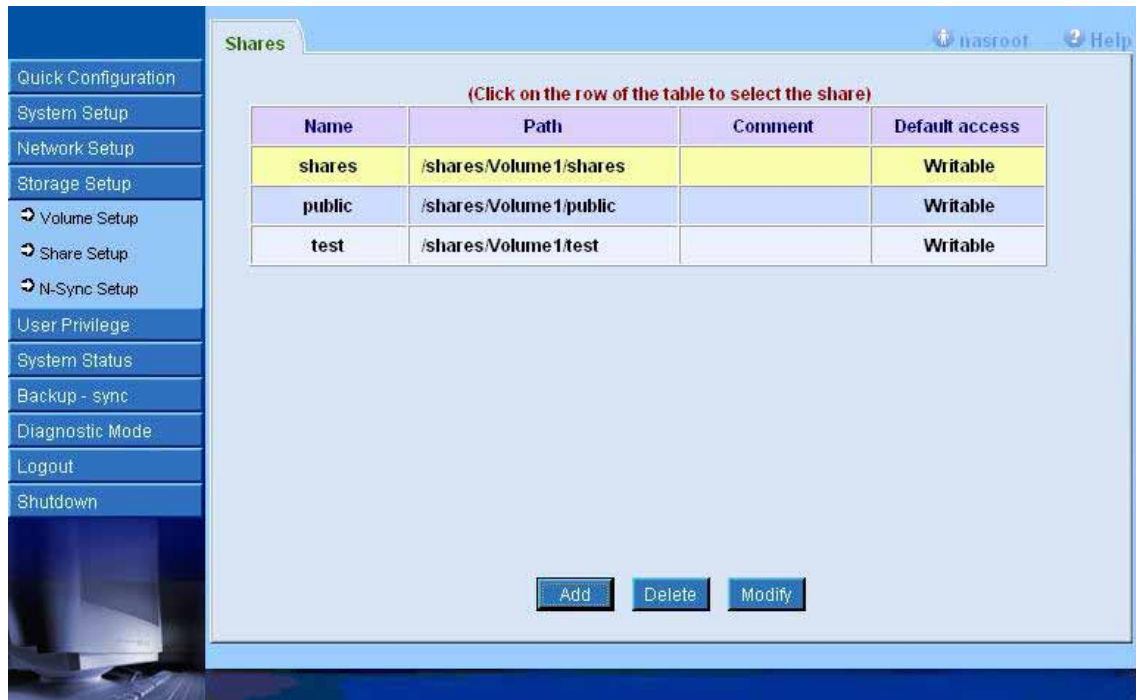


Figure 3-21 Make share folder for Unix/Linux clients

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Next, select “Privilege” in “User Privilege” to choose the share folder to be made for Unix/Linux clients, and enable the “Unix” client to add NFS client privileges, see figure 3-22 and 3-23.

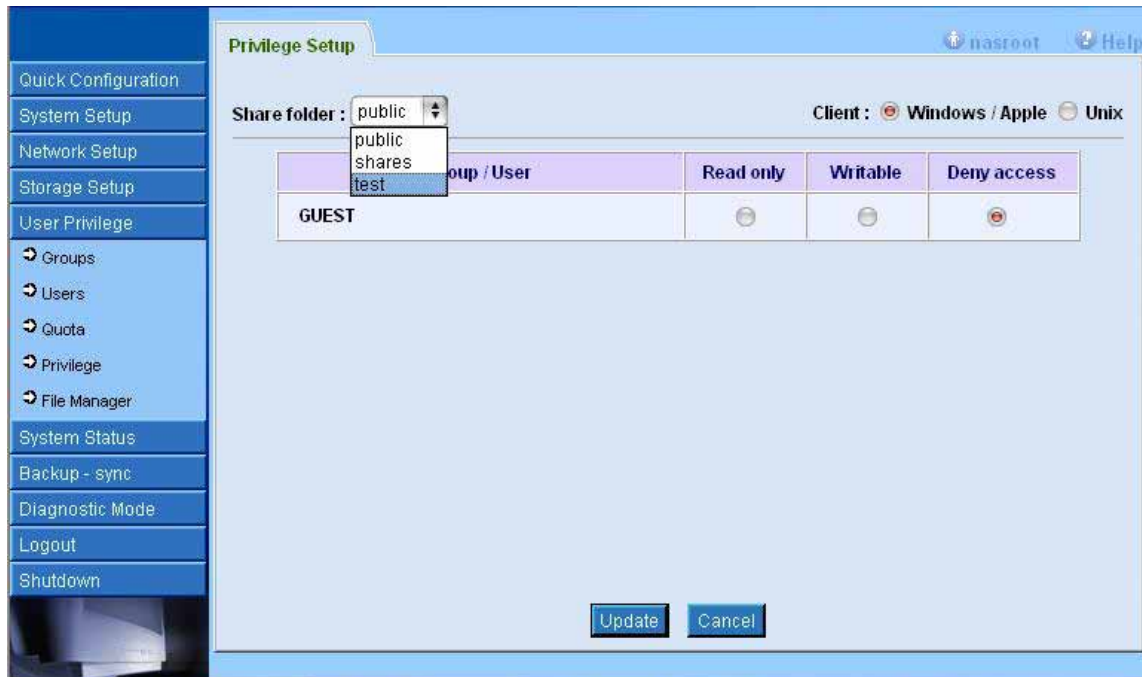


Figure 3-22 Select the folder made for Unix/Linux clients



Figure 3-23 Enable the “Unix” box to add NFS privilege

Set up the “Host name”, “Privilege” and “Root access” and the setup is shown in figure 3-24.

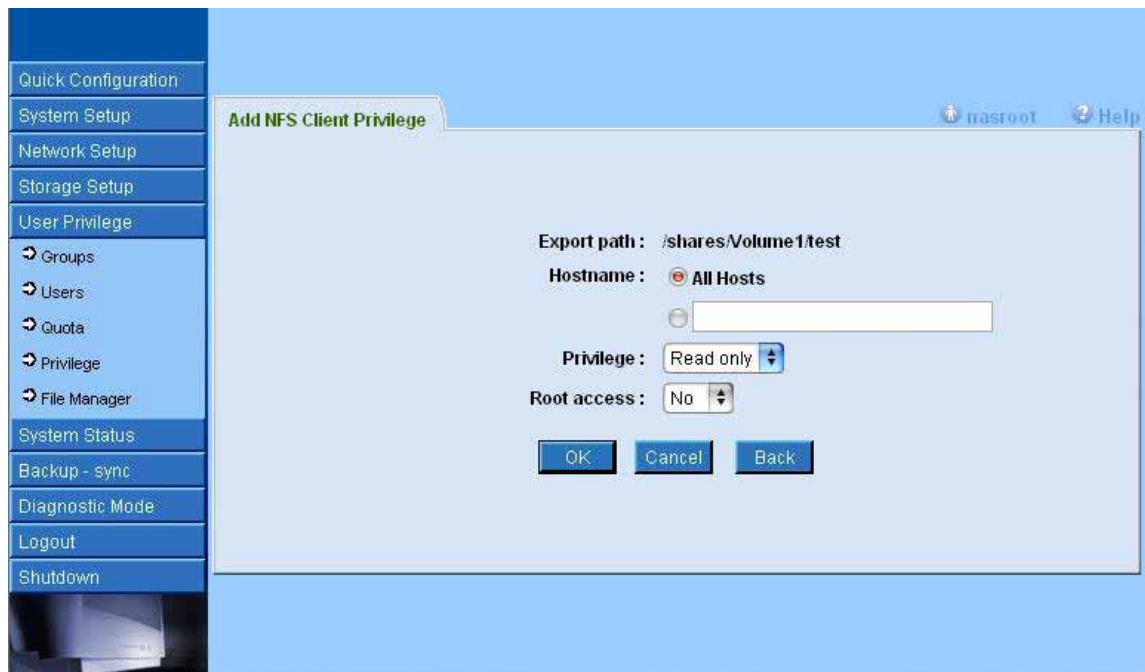


Figure 3-24 Settings of NFS Clients Privilege



Currently, only NFS V2 and V3 are supported.

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Use “mount” command from NFS clients to mount the Orion NAS, as shown in figure 3-25.

```
aliases.db      exports        hosts.deny      ld.so.cache     mtab
alternatives    fam.conf       hotplug         ld.so.conf      mtool
anacrontab      fdprm          htdig.conf     libuser.conf    Muttr
at.deny         filesystems    identd.conf    lilo.conf       nmh
auto.master     fstab          im_palette.pal locale           nscd.
auto.misc       fstab.REVOKE  im_palette-small.pal localtime       nsswi
bashrc          ftpaccess     im_palette-tiny.pal log.d           ntp
cipe            ftpconversions imrc            login.defs      ntp.c
codepages       ftpgroups     info-dir       logrotate.conf  oaf
CORBA           ftphosts      init.d          logrotate.d     openl
cron.d           ftpusers      initlog.conf   lpd.conf        opt
cron.daily      gconf         inittab        lpd.perms       pam.d
cron.hourly     gnome         inputrc        ltrace.conf     pam_s
cron.monthly    gnome-vfs-mime-magic ioct1.save     mail            pango
crontab         gpm-root.conf iproute2       mailcap         paper
cron.weekly     group         isdn           mail.rc         passw
csh.cshrc       group-        issue          makedev.d       passw
csh.login       grub.conf     issue.net      man.config      pbm2p
cups            gshadow      kde            mime-magic       pcmci
default         gshadow-     kderc          mime-magic.dat  pine.
root->rdtest [/etc] cd /
root->rdtest [/] ls
bin boot dev etc home initrd lib lost+found misc mnt opt proc root
root->rdtest [/] mount -t nfs 192.168.1.102:/shares/Volume1/test /test
```

Figure 3-25 Mount the NAS file system from NFS clients

mount	command to mount file system
-t nfs	indicate the file system type to NFS
192.168.1.102	the IP address of NAS
:/shares/Volume1/test	the path of the share folder made for NFS clients on NAS system
/test	refers to the root of the file system on device

Use “df” to check the mounted device, as shown in figure 3-26

```
root->rdtest [/] mount -t nfs 192.168.1.102:/shares/Volumel/test /test
root->rdtest [/] df
Filesystem            lk-blocks      Used Available Use% Mounted on
/dev/hda5             4032092      2054600   1772668   54% /
none                  119860         0    119860    0% /dev/shm
192.168.1.102:/shares/Volumel/test
                        871752      23640    803824    3% /test
root->rdtest [/]
```

Figure 3-26 check the mounted device

Use “umount” to dismount the NAS system, as shown in figure 3-27

```
root->rdtest [/] umount /test
root->rdtest [/] df
Filesystem            lk-blocks      Used Available Use% Mounted on
/dev/hda5             4032092      2054604   1772664   54% /
none                  119860         0    119860    0% /dev/shm
root->rdtest [/]
```

Figure 3-27 Dismount the NAS system

3-5-4 Apple

The system supports Apple Talk communication protocol to enable data sharing between clients with Mac OS operating platform. This page provides settings of related parameters and displays in figure 3-28.

When Apple Talk network service is enabled, the administrator must provide a zone name. When completed, select “Update” button to save the changes. Select “Cancel” to disregard any changes made.

The screenshot shows a window titled "Apple Network" with a blue header bar. In the top right corner of the header is a "Help" button with a question mark icon. The main content area has a light blue background. At the top, there is a "Status:" label followed by two radio buttons: "Enable" (which is selected) and "Disable". Below this is a horizontal line. Under the line, there is a "PDC Auth.:" label followed by an unchecked checkbox and the text "Yes". Below that is a "Zone name:" label followed by a text box containing "<searching for zones...>" and a small downward arrow button. At the bottom center, there are two buttons: "Update" and "Cancel".

Figure 3-28 Enable Apple Network Service

3-5-4-1 OS 9.2.2

1. Setup the “TCP/IP” of “Control Panels”, as shown in figure 3-29.



Figure 3-29

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2. If there is a DHCP server, turn on the DHCP and make sure the setup of IP section and Subnet mask is the same as the NAS system, as shown in figure 3-30

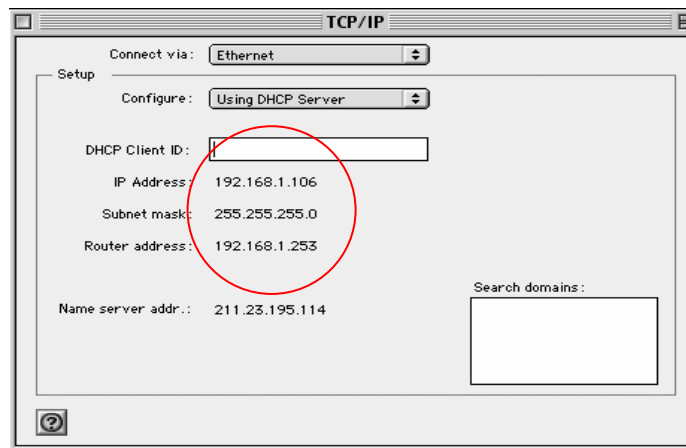


Figure 3-30

3. Please click on the Apple Icon on the top left hand corner and select the "Chooser" to connect to the NAS as shown in figure 3-31

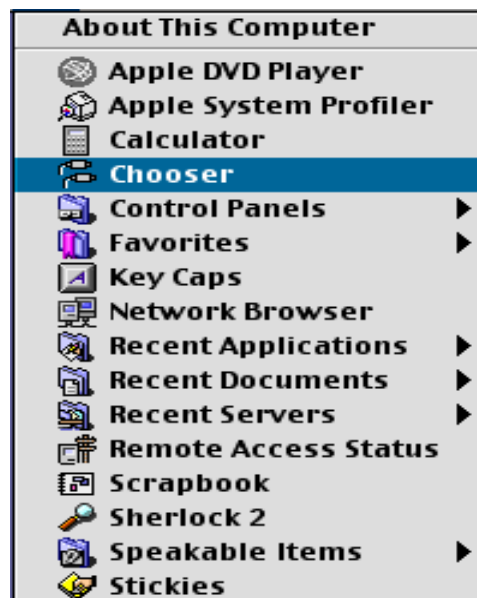


Figure 3-31

4. After selecting the Chooser, please select AppleShare and you can see the Select a file server at the right-hand side. Please note that you must select “Active” for AppleTalk which is located at the bottom right-hand side. Otherwise, you won't be able to see the computer server name in the right side as shown in figure 3-32

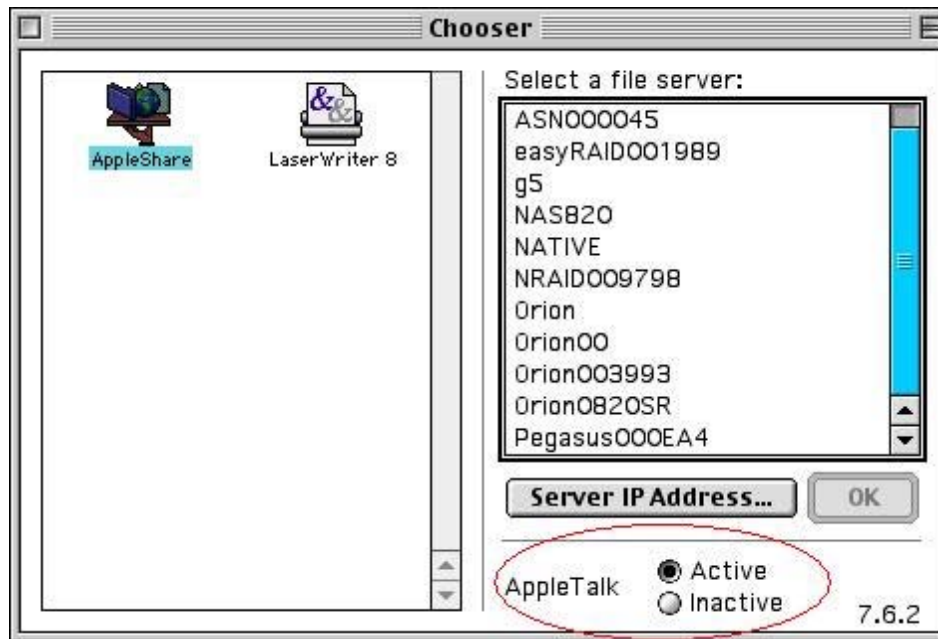


Figure 3-32 Enable active of AppleTalk network services

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5. Select the appropriate server by highlighting it and click the OK button in figure 3-33

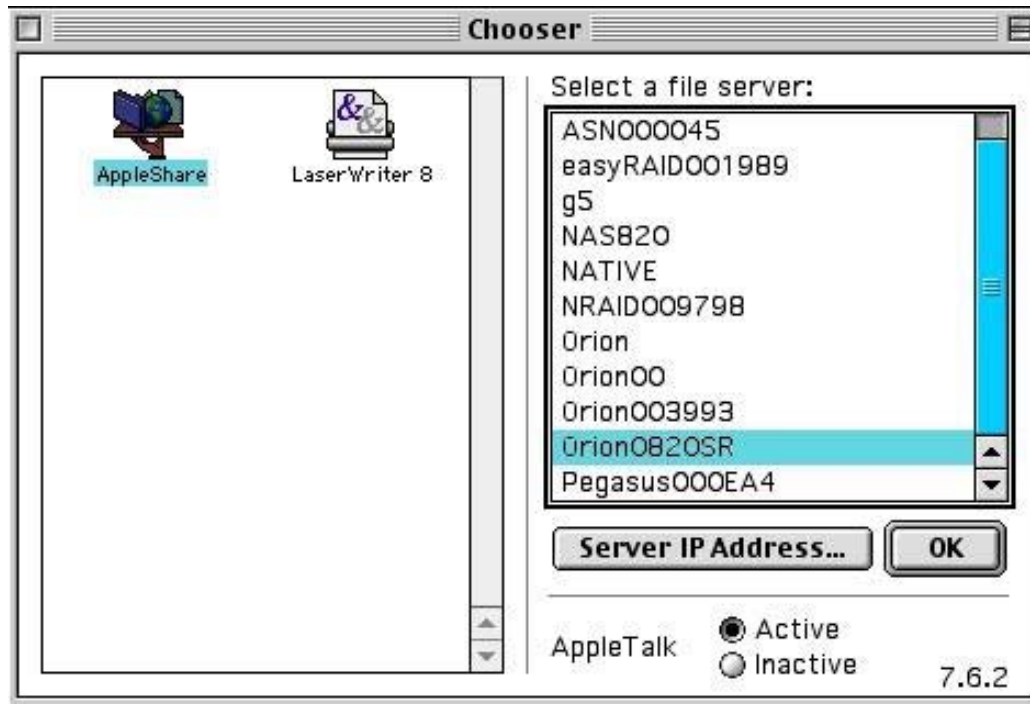


Figure 3-33

6. Please select how you would like to login, that is as a “Guest” or as a “Registered User”. If “GUEST” is selected as the preferred login in the NAS, then you can use “GUEST” as your login name as shown in figure 3-34



Figure 3-34

7. Entering the NAS as a GUEST, the status will elect the share table of contents as shown in figure 3-35

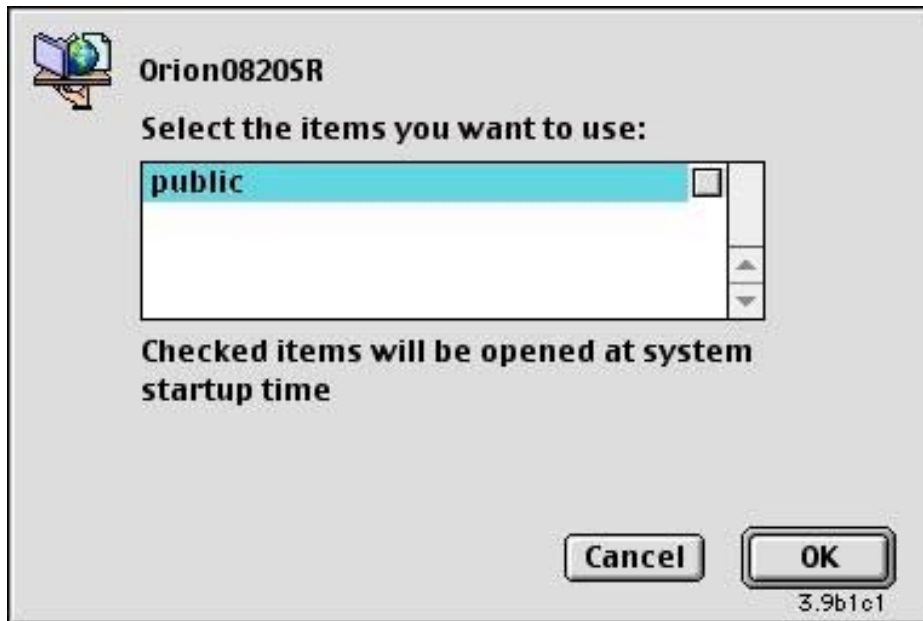


Figure 3-35

8. After selecting the items required, you will see the shared folder as a server icon on your desktop as shown in figure 3-36.



Figure 3-36

9. Click on the shared item, use the command key (which is located next to the space bar) + “I” (Command + I or “Get Info” Short Cut) to check the share item condition (figure 3-37). You can see it is using TCP/IP mode as red zone's connecting method, and at the ICON, it will show an earth icon at the bottom of the disk drive

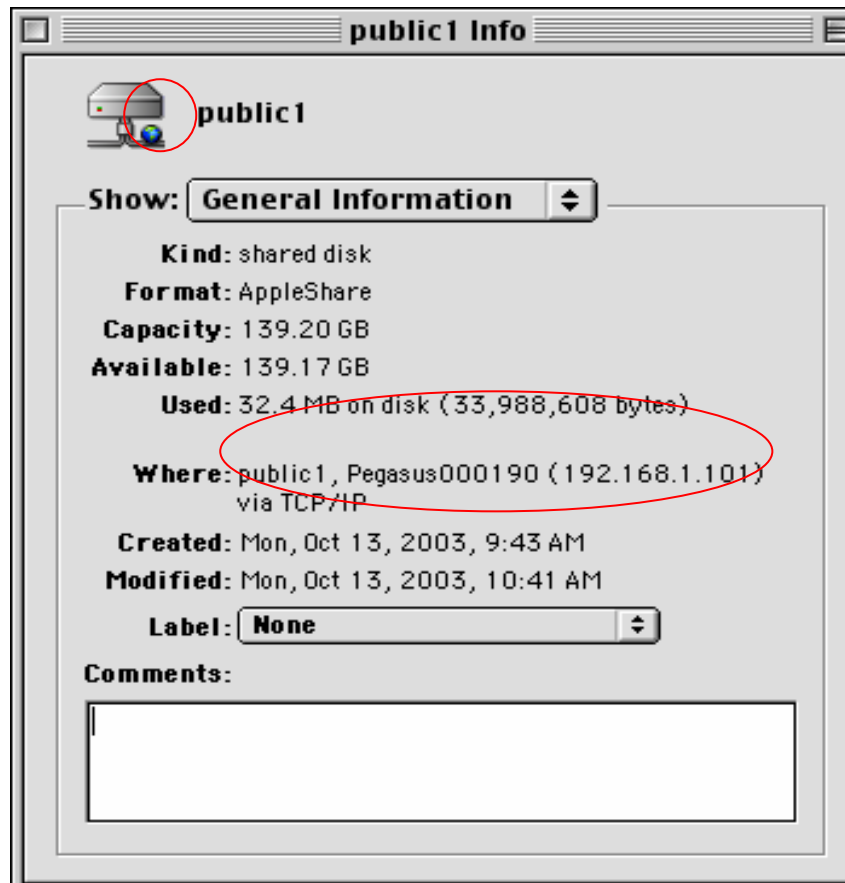


Figure 3-37

3-5-4-2 OS X

1. Set up the Network settings from the “System Preferences”. As shown in figure 3-38.



Figure 3-38 Network Settings of System Preferences

2. Make sure that the IP section is the same as the NAS system. Otherwise, the performance will be impacted. See figure 3-39.

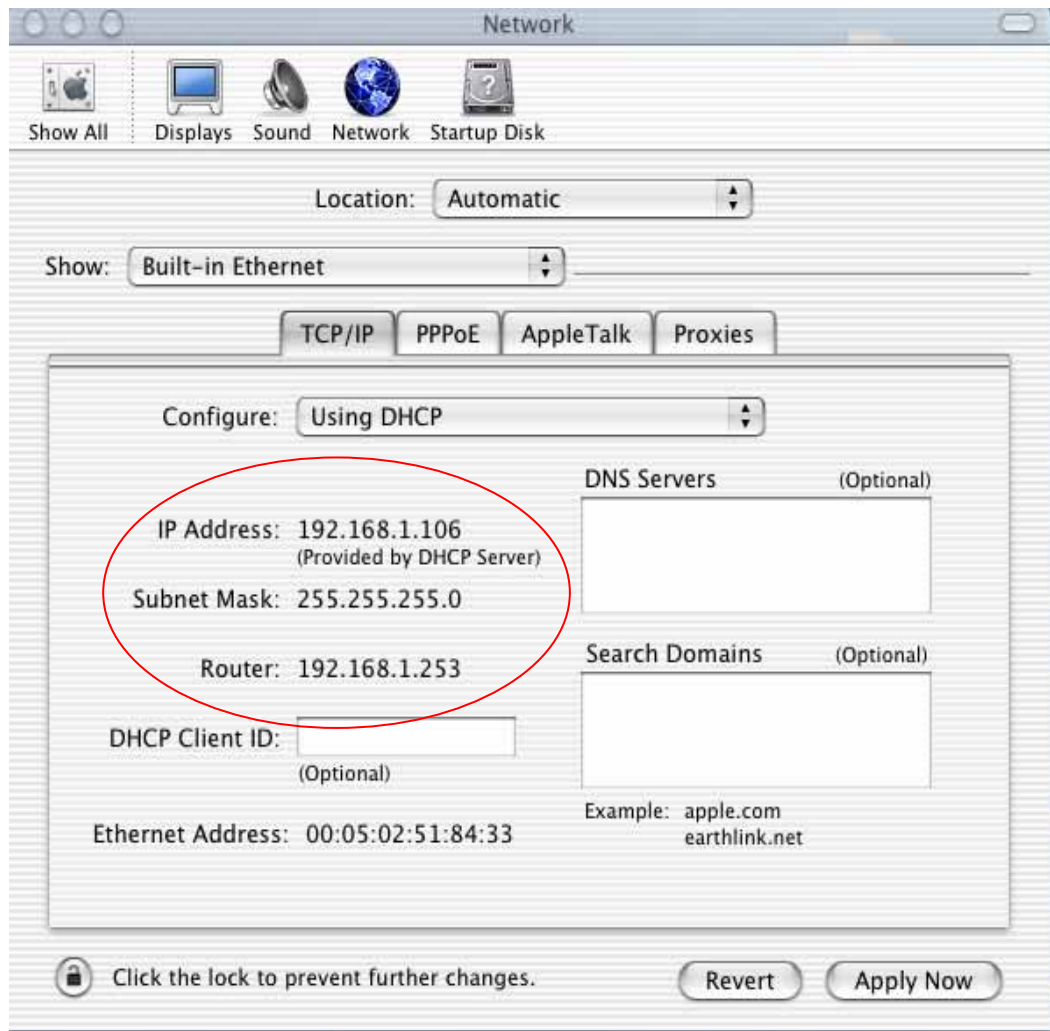


Figure 3-39 Status of DHCP

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3. Enable the “Make AppleTalk Active” box by checking it with a ‘tick’, as shown in figure 3-40.

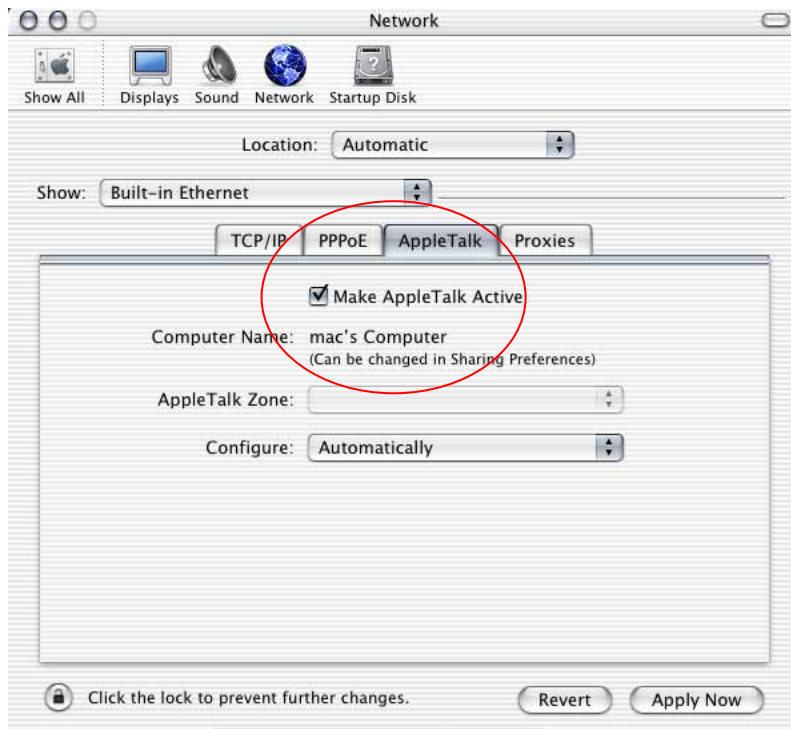


Figure 3-40 Settings of AppleTalk

The name of the Server will appear on the left side of the screen of “Connect to Server” as Shown as figure 3-41. In this case, the top icon in the Connect to Server screen

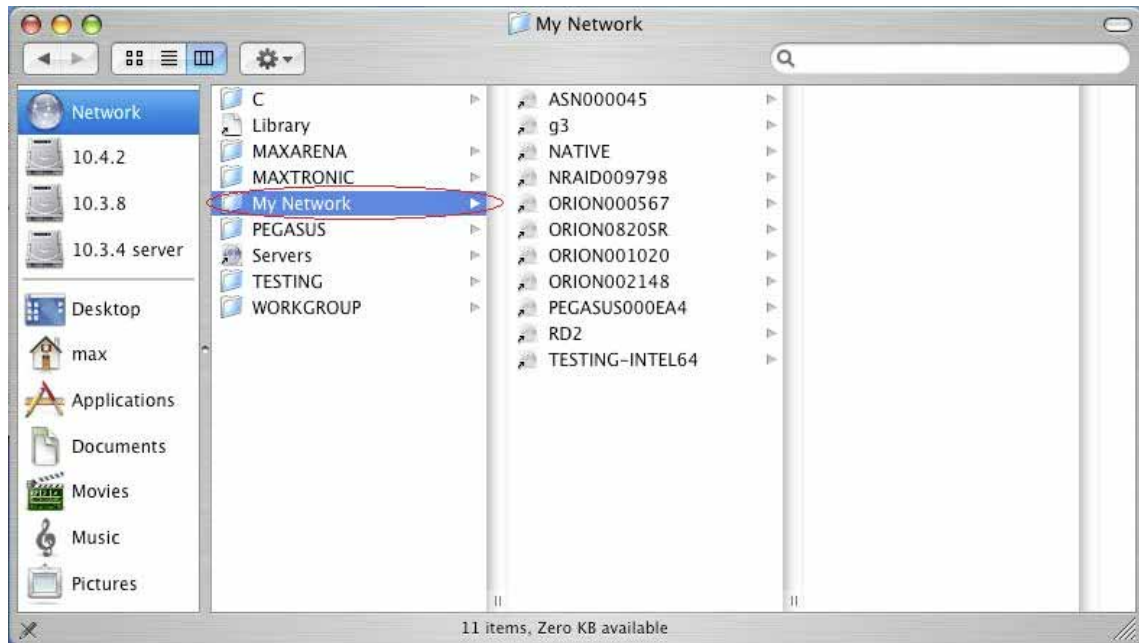


Figure 3-41 Connect to Server with AppleTalk



If “Make AppleTalk Active” is unchecked as shown in figure 3-42, the screen of “Connect to Server” will look like figure 3-43; The Server icon and name will not appear to enable AppleTalk connection.

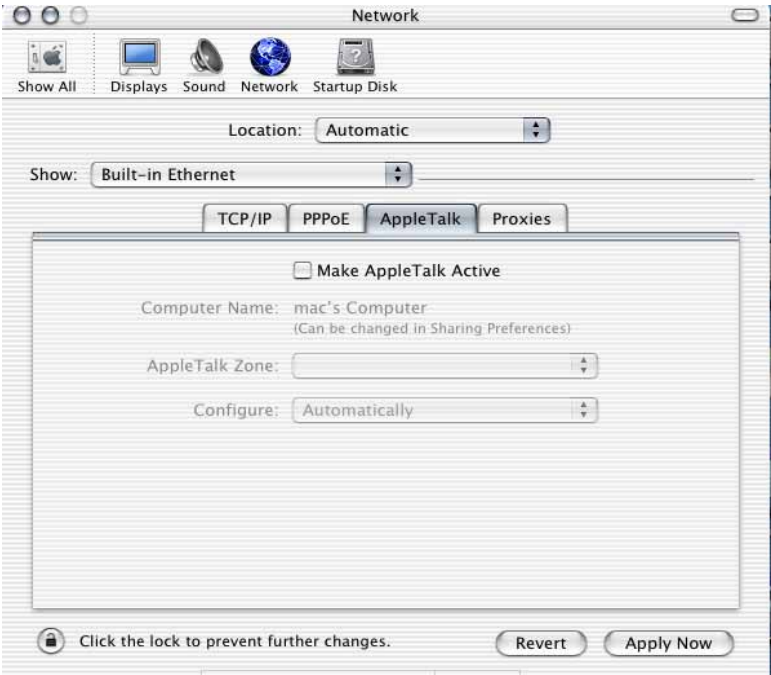


Figure 3-42 Default of OS X

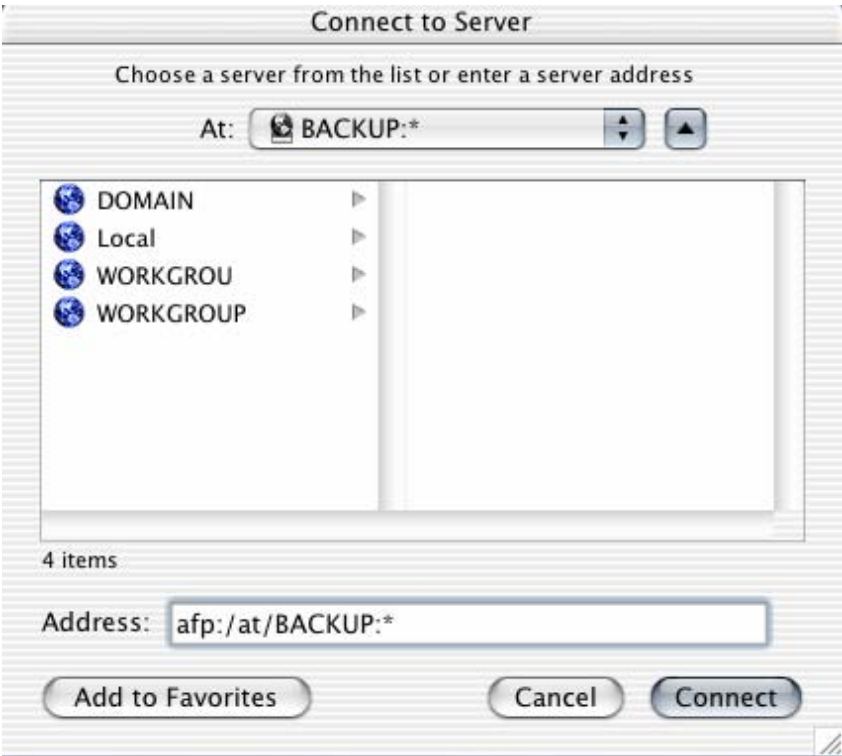


Figure 3-43 Connect to Server without AppleTalk

4. Select “Connect to Server” from “Go” on the top function bar of OS X, as shown in figure 3-44. There are two type of protocol to connect to the server; AppleTalk and SMB. A higher performance of network transmission is possible with AppleTalk than using SMB. Click “*” on the “Connect to Server” screen and you will see the server name on right side of the window, as shown on figure 3-45.



Figure 3-44

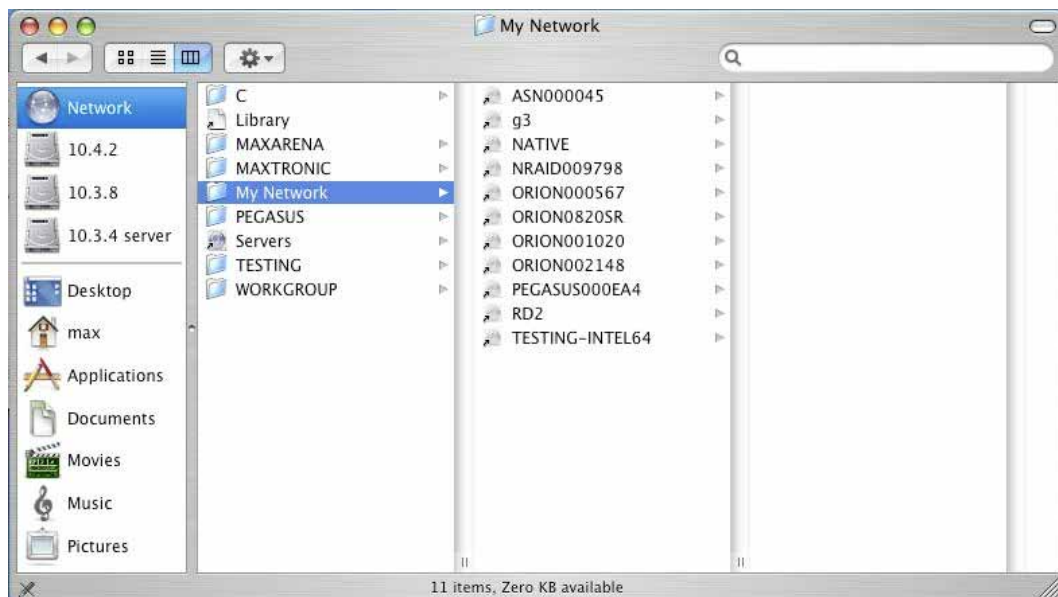


Figure 3-45

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5. Click the name of NAS system to highlight it, the AFP connect type will be shown in bottom of the screen, as shown in figure 3-46.

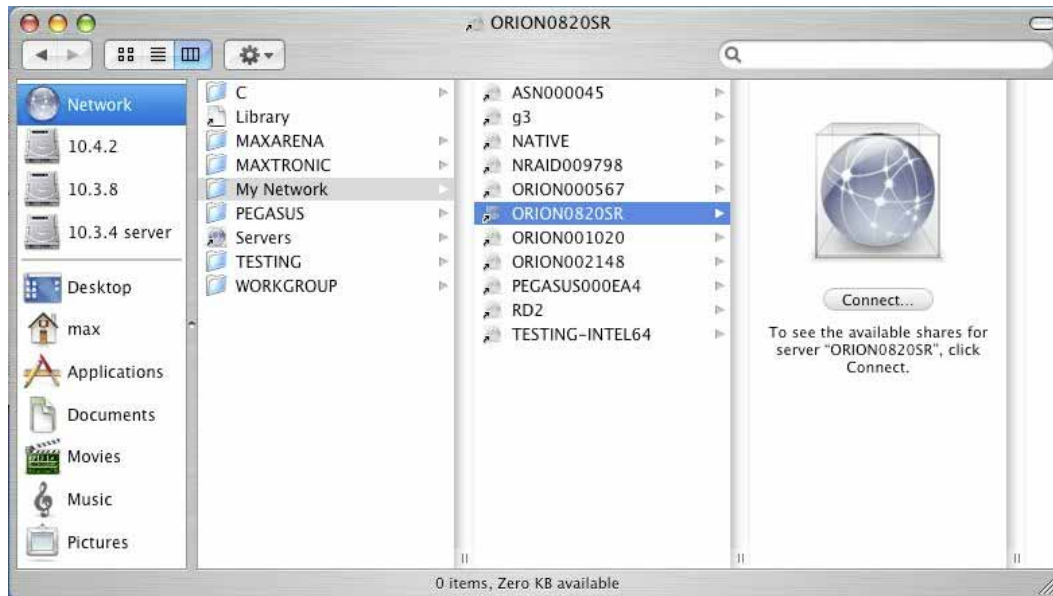


Figure 3-46 Connect to NAS system by AppleTalk

6. Click on the “Connect” button and the log on screen will appear, as shown in figure 3-47. Log-in as per your user name and password assigned by the Administrator.



Figure 3-47

7. Then the volume of NAS system will be shown as figure 3-48.

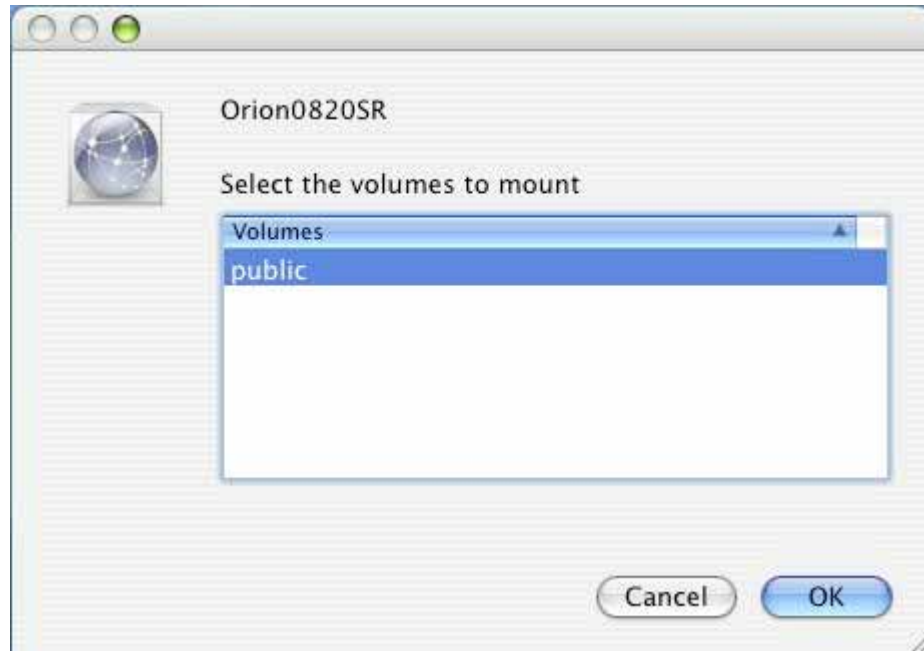


Figure 3-48 Volume of NAS system

8. Choose the appropriate volume and click “OK”, the volume will be shown on desktop as shown in figure 3-49.



Figure 3-49

Chapter 3

9. The operation of using Samba to connect NAS system is similar to using AppleTalk. Select “WORKGROUP” (Default) in the “Connect to Server” screen, as shown in figure 3-50.

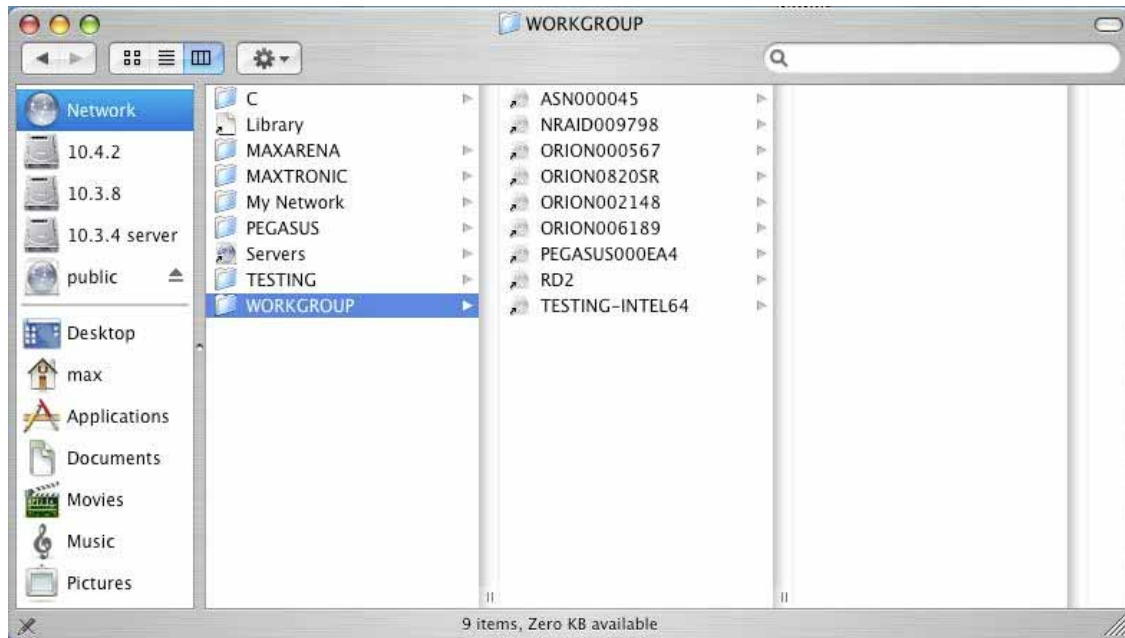


Figure 3-50 Select “WORKGROUP” to use Samba

10. Select the name of NAS system by highlighting it, the Samba connection mode will be shown in of the “address” space at the bottom of the screen, (see figure 3-51).

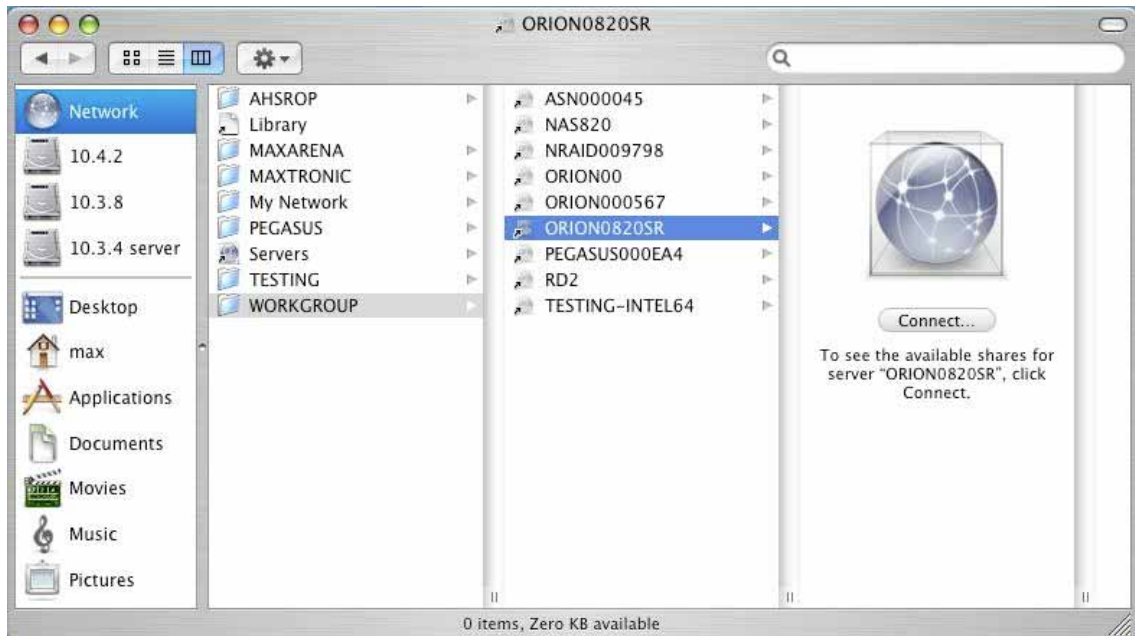


Figure 3-51 Connect to NAS system by Samba

11. Click “Connect” and select share folder, as shown in figure 3-52

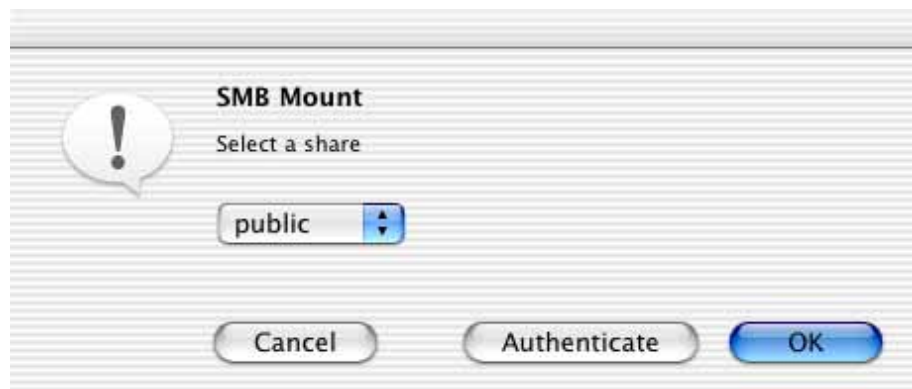


Figure 3-52 Share Folder of NAS system

12. Click “OK” and the Authentication screen will be displayed, as shown in figure 3-53.



Figure 3-53 SMB/CIFS Authentication Screen


13. After entering the Username and Password, the shared folder will be displayed on the desktop (figure 3-54).



Figure 3-54

3-6 Storage Volume Settings

Storage volume settings menu allows the administrator to configure various settings according to required environment-specific storage mode. The screen after storage mode is set is shown in figure 3-55.



Storage Information nasroot Help

Disk Information
(Showing detail informations by double clicking the entry)

Name	Model	Capacity(MB)	Status
Disk 1	6L200M0	194481	Unused
Disk 2	6Y080M0	78167	Unused
Disk 3	ST38081	76319	Unused
Disk 4	WD1600J	152627	Unused
Disk 5	ST35006	476940	In Volume 1
Disk 6	ST35006	476940	In Volume 1
Disk 7	ST35006	476940	In Volume 1
Disk 8	ST35006	476940	In Volume 1

Volume Information

Figure 3-55 Contents of Storage Volume Settings Menu

Storage Volume information includes the used HDD name, type, capacity, and related information. The content of a storage volume may be: (1) a single HDD, or (2) a RAID system which is made up with multiple HDDs.

3-6-1 HDD Information

On the upper half of figure 3-55, lists all used HDD. Its contents include:

- (1) Name: Display the name of HDD in system.
- (2) Model: Display HDD model.
- (3) Capacity: Display the capacity of HDD.
- (4) Status: The location of the storage volume.

3-6-2 Storage Volume Information:

On the lower half of figure 3-55, lists related information of all established storage volumes. Its contents include:

- (1) Name: Display storage volume name.
- (2) Type: Display storage volume type.
- (3) Capacity: Display storage volume capacity.
- (4) Used Space (MB): Display amount of space of storage volume in use.
- (5) RAID HDD: Includes one or more HDD. Display the HDD combination used by storage volume.
- (6) Status: The displayed status can be one of the following six items:

Not Used	The storage volume is not in use.
In Use	The storage volume is in normal operation.
Data Synchronization	When the system is setup for the first time or is shut down abnormally, if there is any RAID-1 or RAID-5 setup in storage volume, the system will automatically duplicate backup data in RAID-1. For RAID-5 setup, the system performs synchronization on storage volume data, according to the associated location of parity bit.

Data Recovering	The system supports RAID-1 and RAID-5 hot-swap. When storage volume setup is any of these two types, after the replacement of any HDD, the system automatically rebuilds all data in the original HDD.
Data Synchronization Delayed	The basic concept is equivalent to data synchronization. But if another storage volume is performing data synchronization, actions of the storage volume will be delayed until the operation of former storage volume is completed.
Formatting	Storage volume is formatting mode. The progress status will be displayed in this field.

To see more details pertaining a storage volume, double click on the “Storage Volume Name.” Figure 3-56 displays detailed information of a storage volume.

Storage Information Help	
Name	Volume1
Type	RAID 5
Capacity(MB)	2018
Used(MB)	32
Rebuild speed	High speed
RAID disks	Disk 1, Disk 2, Disk 3, Disk 4, Disk 5, Disk 6, Disk 7, Disk 8 [8/8]
Stripe size	64 KB
Status	Inuse
Back	

Figure 3-56 Detailed Information of A Storage Volume

3-6-3 Storage Volume Settings Menu

Figure 3-57 displays options of storage volume settings menu and Figure 3-58 shows storage information installed in system currently.



Figure 3-57 Options of Storage Volume Settings Menu

A screenshot of a 'Storage Information' window. The window has a blue header with the text 'Storage Information' on the left and 'nasroot' and 'Help' on the right. Below the header, there is a section titled 'Disk Information' with a subtitle '(Showing detail informations by double clicking the entry)'. This section contains a table with four columns: 'Name', 'Model', 'Capacity(MB)', and 'Status'. The table lists eight disks. Disks 1 through 4 are 'Unused', while disks 5 through 8 are 'In Volume 1'. Below the table, there is a section titled 'Volume Information' which is currently empty. A vertical scrollbar is on the right side of the window.

Name	Model	Capacity(MB)	Status
Disk 1	6L200M0	194481	Unused
Disk 2	6Y080M0	78167	Unused
Disk 3	ST38081	76319	Unused
Disk 4	WD1600J	152627	Unused
Disk 5	ST35006	476940	In Volume 1
Disk 6	ST35006	476940	In Volume 1
Disk 7	ST35006	476940	In Volume 1
Disk 8	ST35006	476940	In Volume 1

Figure 3-58 Storage Information

Double click on installed disk and the disk information screen appear below as Figure 3-59.



Figure 3-59 Disk Information

ICRC	it is the acronym of “Interface Cyclic Redundancy Check”. ICRC error indicates there is data error during the data transmission between hard disk and the controller. When CRC error occurs, read/write command will retry again. The greater the number is, the more unstable the hardware is.
UNC	Indicates that uncorrectable data error happened after retries, mostly due to media error.
IDNF	a requested address is outside user accessible range.
ABRT	Unsuccessful commands which has been dropped out.

Chapter 3

All error numbers will be reset to zero after system reboot.

The Orion NAS has supporting bad sector remapping feature with the bad block up to 384, system will warning by buzzer for attention. With bad sector counting up to 512 then the hard disk will be kick out by system automatically.



We are strongly recommend when the bad sector count has up to 384 and alarm by system. Please replace the hard disk in very short time to prevent any data lose.

3-6-4 Storage Volume Layout

Figure 3-60 shows the options of storage volume layout menu.



Figure 3-60 Storage Volume Layout Menu

Any storage volume is formed by logic means. The formation is either a single HDD or an array formed by multiple HDD.

This page displays related information of a storage volume and provides options for storage volume settings.

- (1) Add: Create a new storage volume.
- (2) Delete: Select a storage volume and click "Delete" to delete the storage volume.
- (3) Modify: Select a storage volume and click "Modify" to modify required fields. This mode allows only the rebuilding speed to be changed.
- (4) Format: Formats a selected storage volume.

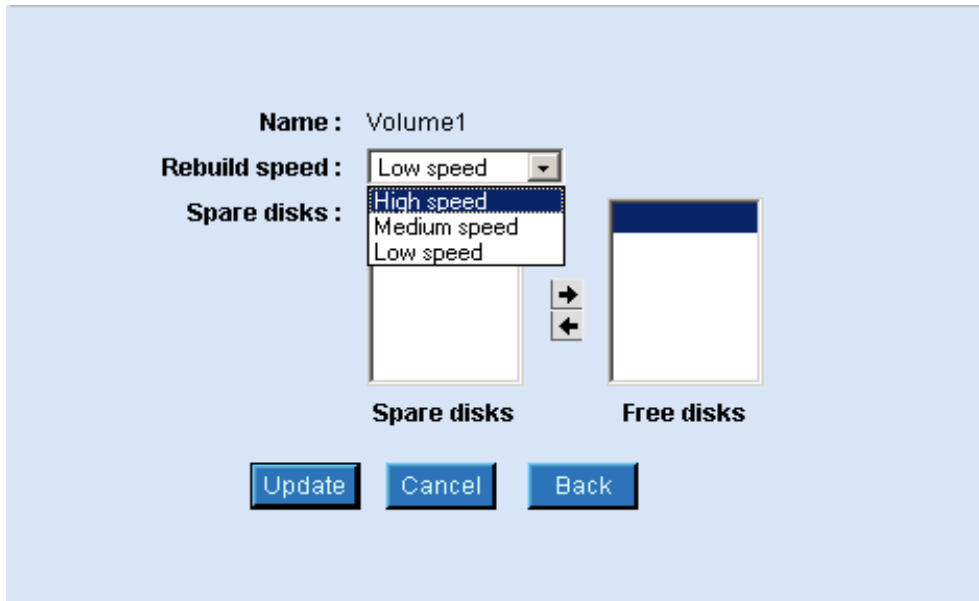


Figure 3-61 Alter “Rebuilding Speed” in modify storage volume option

To make any changes, the volume must first be highlighted and the relevant option selected. The “Modify” mode can only be selected during initial volume build up or in rebuilding mode. Figure 3-61 Alter “Rebuilding Speed” in modify storage volume option

3-6-5 Folder Layout

This menu applies to folders in a storage volume and stores them in a cross-platform network to allow access of clients using SMB, NFS, or Apple Talk. Figure 3-62 shows the full view of folder contents.



(Click on the row of the table to select the share)

Name	Path	Comment	Default access
plan	/shares/Volume1/Plan	for NAS Product	Read only
report	/shares/Volume1/www	Everyone can use	Writable

Add Delete Modify

Figure 3-62 Full View of Folder Contents

If there is no normal operational storage volume created in the system, a data folder can not be created.

Figure 3-63 shows “Add Folder” option in the system.



The screenshot shows a dialog box for creating a data folder. It has the following fields and controls:

- Name :** A text input field.
- Volume :** A dropdown menu currently showing 'Volume1'.
- Path :** A text input field containing '/shares/Volume1/' with a cursor at the end.
- Comment :** A text input field.
- Default access :** A dropdown menu currently showing 'Writable'.
- Buttons:** Three buttons at the bottom: 'OK', 'Cancel', and 'Back'.

Figure 3-63 Create Data Folder

The following parameters must be set to create a new data folder:

- | | |
|-------------------------------|--|
| (1) Name: | The name, which is entered, is the physical name of the folder that will be displayed on the system. |
| (2) Storage Volume: | Select the folder and put it in any created storage volume. |
| (3) Path: | The actual path, where the folder is stored in a storage volume. |
| (4) Comment: | Comments for the created folder, its contents will be displayed in the network environment. |
| (5) Default Access Privilege: | Set the default access mode as “Write” or “Read-Only.” |

3-6-6 N-Sync Setup

N-Sync is a share level replication utility based on rsync tool. Like rsync, N-Sync's client-server architecture makes replication of files/folders easier from local share to remote share and vice versa (from source to destination). An enabled/disabled switch for N-Sync server could be set by administrator to choose to export N-Sync modules to clients or not. Administrator could also choose to replicate shares immediately or by scheduler. N-Sync setup has provided four N-Sync utilities (**Server**, **Client**, **Scheduler** and **N-Sync log**). Please refer the figure below for each utility's illustrate.

Server:

N-Sync

nasroot Help

☒ Server
 ☐ Client
 ☐ Scheduler
 ☐ N-Sync Log

Status : ☐ Enable ☒ Disable

Name	Path	Comment	Read only
Application	/shares/Volume1/application		<input type="checkbox"/>
Public	/shares/Volume1/public		<input type="checkbox"/>
wan-home	/shares/Volume1/wan-home	WAN Users' home	<input type="checkbox"/>

Update Cancel

Figure 3-64

An N-Sync server exports share modules to the remote N-Sync client to be replicated through rsync protocol. Because of using rsync protocol, any client that uses rsync tool is able to replicate shares from N-Sync server.

Enable	Enable N-Sync Server. (Only the server which is enabled will be shown in N-Sync client server list.)
Disable	Disable N-Sync Server.
Name	Share name of the system that is exported by N-Sync server.
Path	Share path of the system.
Comment	Comment of the share.
Read only	Checked for exporting as read only module to the remote N-Sync/rsync client.
Update	Update changes that are just made.
Cancel	Cancel the changes.

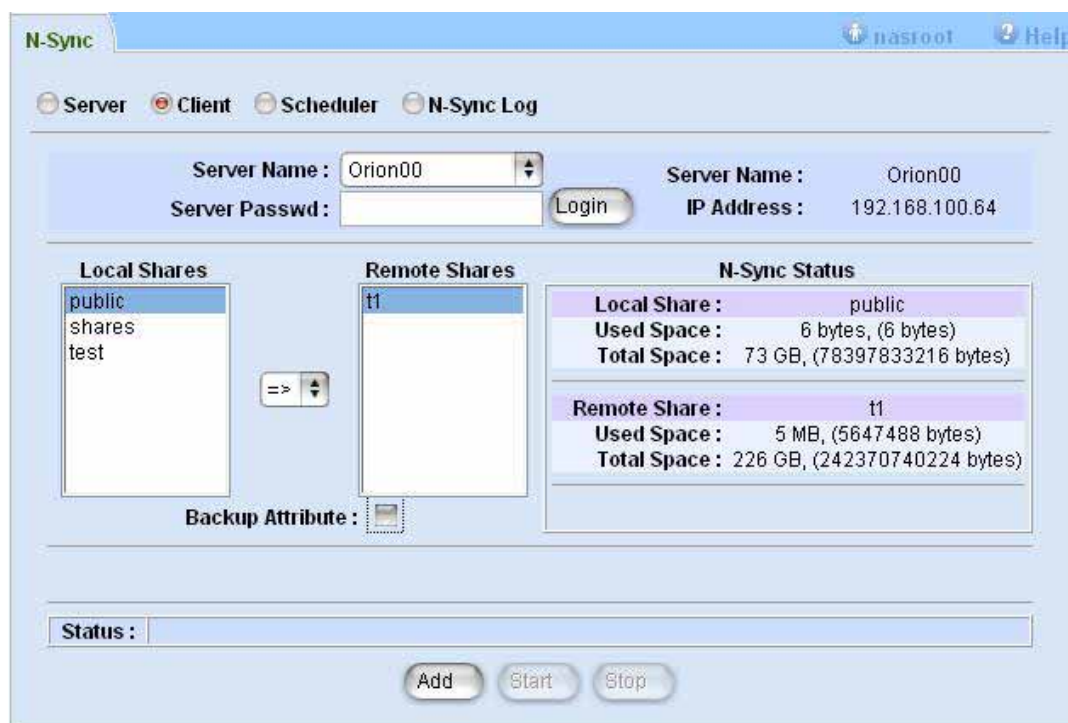
Client:

Figure 3-65

An N-Sync client is an rsync based utility that allows administrator to replicate files/folders between local share and remote N-Sync share.

Server Name (list)	N-Sync servers which are available in LAN.
Server Password	Password of remote N-Sync server.
Login	Connect to the selected N-Sync server and authenticate with server password.
Server Name	Remote N-Sync server to which we are currently connected.
IP Address	IP address of the remote N-Sync server.
Local Shares (list)	Local shares.
Sync-OP	Synchronize operations including synchronize from local share to remote share (=>) and from remote share to local share (<=).
Remote Shares (list)	Remote shares.
N-Sync Status	Statistic of selected local share and remote share.
Used Space	Space currently used by files/folders.
Total Space	Total space of the share.
Status	N-Sync status, messages, or returned error codes of N-Sync client.
Add	Add Sync-Job.
Start	Start the Sync-Job that is just added.
Stop	Stop the Sync-Job which is running.

Scheduler:

An N-Sync scheduler periodically runs N-Sync jobs that are described by Profiles. A profile includes profile name, profile comment and descriptions of the N-Sync job including local share, remote N-Sync server, server IP, remote share of N-Sync server, Sync OP, schedule frequency and enable/disable states of the profile. Administrator can create a new profile, delete a profile or modify a profile. There are four modification steps of a profile when administrator wants to change the configurations of the selected profile.

Create new profile:

Name	New profile name.
Comment	Profile comment of new profile.
Add Profile	Click “Add profile” to initial the profile creation.

The screenshot displays the N-Sync Scheduler web interface. At the top, there's a navigation bar with 'N-Sync' and user options 'nasroot' and 'Help'. Below this is a sub-navigation bar with tabs for 'Server', 'Client', 'Scheduler' (which is active), and 'N-Sync Log'. The main content area is divided into two sections. The top section is for creating a new profile, featuring input fields for 'Name' (containing 'public') and 'Comment' (containing 'backup for public'), and an 'Add Profile' button. The bottom section is titled 'Select profile' and 'Profile details'. The 'Select profile' area is currently empty. The 'Profile details' area lists various configuration fields: Name, Comment, Local Share, Server Name, IP Address, Remote Share, Sync OP, Frequency, Backup Attribute, and Disabled. Each field has a corresponding input area, with the last two having checkboxes. At the bottom of the interface, there are buttons for 'Delete Profile' and 'Modify Profile'.

Figure 3-66

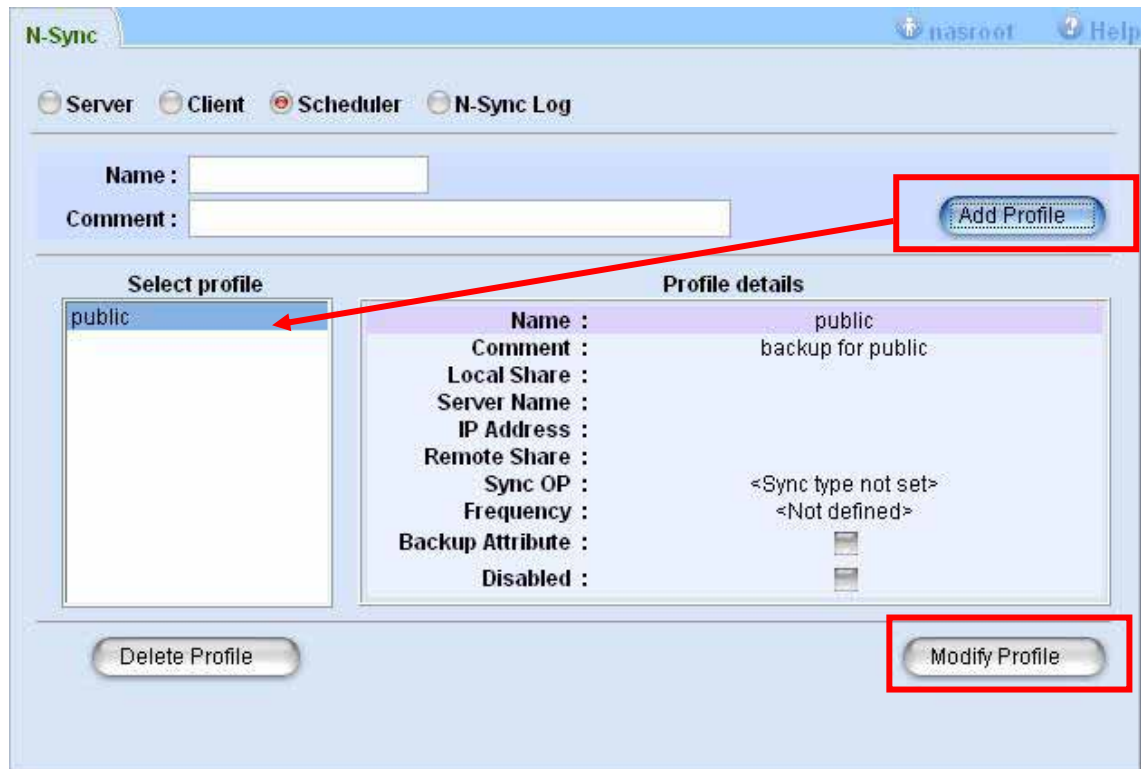


Figure 3-67

For the new profit create, user will need to select it and choose “Modify Profile” to complete the setting. Please refer the figures below for each step.

Chapter 3

Step1. Local Share Setup

Please select target share from “Select Local Shares” box.



Step1. Local Share Setup figure

Step2. Remote Share Setup

Login to available N-Sync server first then from “Select Remote Share” box to choose desire share for synchronize.

The screenshot shows the 'N-Sync' application window with the 'Scheduler' tab selected. The window title is 'N-Sync' and it includes a 'nastoot' logo and a 'Help' button. Below the tabs, the title bar reads 'Step 2: Remote share setup' and 'Profile : public'. The main area contains fields for 'Server Name' (Orion00) and 'Server Passwd' (masked with dots), with a 'Login' button. To the right, there are labels for 'Server Name:', 'IP Address:', and 'Remote Share:'. Below these is a 'Select Remote Share' section with a large empty box. To the right of this box is a 'Status' section with labels for 'Remote Share:', 'Used Space:', and 'Total Space:'. Below the status section is a 'Backup Attribute:' label with a small icon. At the bottom right, there are '<< Back' and 'Next >>' buttons.

Step2. Remote Share Setup

Chapter 3

Step3. Sync type Setup

N-Sync is capable for admin to choose the synchronize direction
Local to remote or remote to local.

The screenshot shows the 'N-Sync' application window. The title bar includes 'N-Sync', 'nasroot', and 'Help'. Below the title bar, there are four tabs: 'Server', 'Client', 'Scheduler', and 'N-Sync Log'. The 'N-Sync Log' tab is selected. The main window area is titled 'Step 3: Sync type setup' and 'Profile : public'. On the left, under 'Select Sync Type', there is a list box with three options: '<Sync type not set>', '<Sync type not set>', and 'Sync from local to remote' (which is highlighted). Below the list box, there is a button labeled '<< Back'. On the right, there is a text box containing the following information: 'Local Share : public', 'Server Name : Orion00', and 'Remote Share : t1'. Below the text box, there is a button labeled 'Next >>'.

Step3. Sync Type Setup

Step4. Schedule Setup

Admin can choose the different synchronize frequency according to its requirement.

The screenshot shows the 'N-Sync' application window with the 'Scheduler' tab selected. The window title bar includes 'N-Sync', 'nasroot', and a 'Help' icon. Below the title bar, there are four tabs: 'Server', 'Client', 'Scheduler' (which is active), and 'N-Sync Log'. The main content area is titled 'Step 4: Schedule setup' and shows 'Profile : public'. Under the 'Frequency' section, there are five radio button options: 'Every Month', 'Every Week' (which is selected), 'Every Day', 'Every Few Hours', and 'Run Once'. To the right of these options is a large empty rectangular box. Below the frequency options, there is a 'Start Time' field with a dropdown arrow, currently showing '0:00'. To the right of the start time is a 'Day of the Week' dropdown menu, currently showing 'Sun' and with a list of days (Sun, Mon, Tue, Wed, Thu, Fri, Sat) visible. At the bottom right of the window, there are two buttons: '<< Back' and 'Finish >>'.

Step4. Schedule Setup



Figure 3-68 Display of Profile information when setting complete

Modify profile:

Highlight the profile from “Select profile Box” then click on “Modify Profile” bottom and system will lead you go through each setting for desire of change.

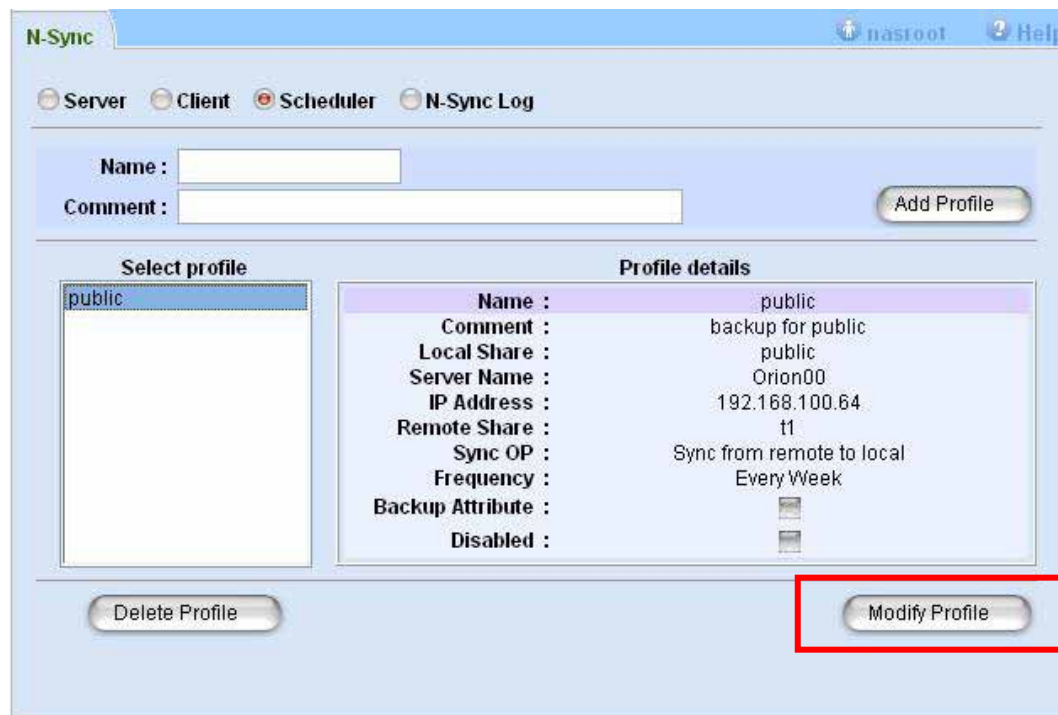


Figure 3-69

Delete profile:

Highlight the profile from “Select profile Box” then click on “Delete Profile” bottom to delete selected profile.



Figure 3-70

Disable profile:

Highlight the profile from “Select profile Box” then checked on “Disabled” from Profile details.

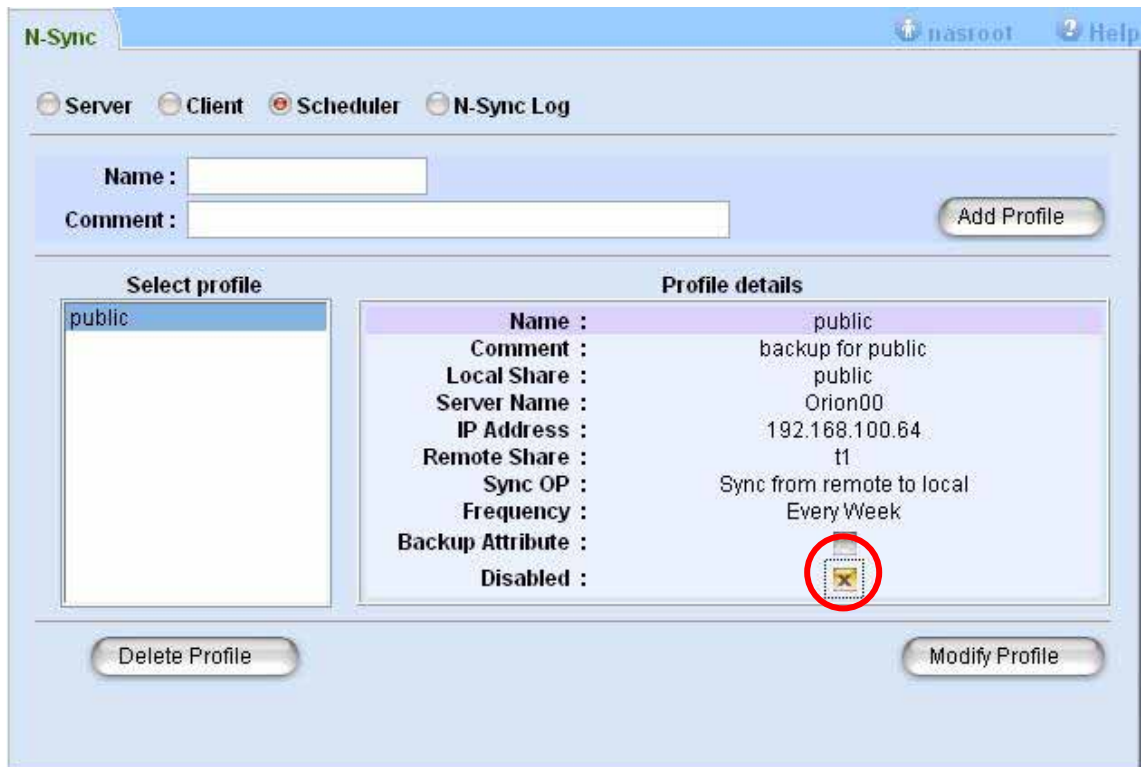


Figure 3-71

N-Sync Log

N-Sync log will keep records of N-Sync job which is activated from N-Sync Client of N-Sync Scheduler.

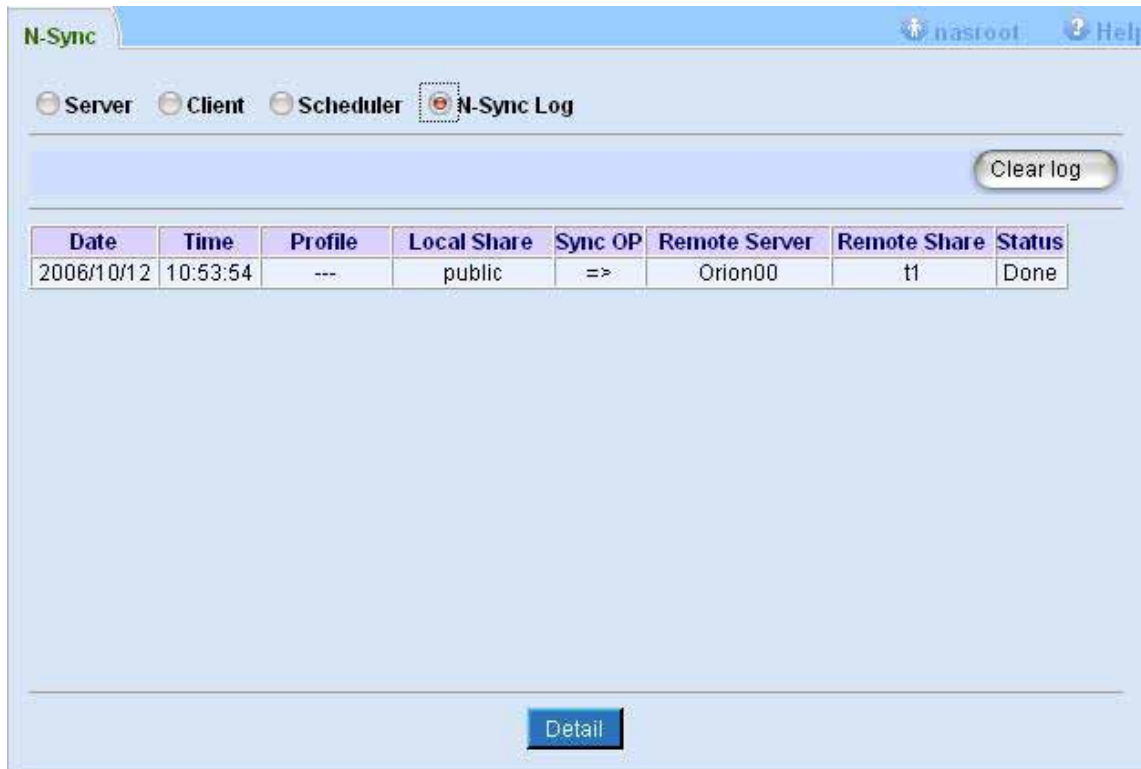


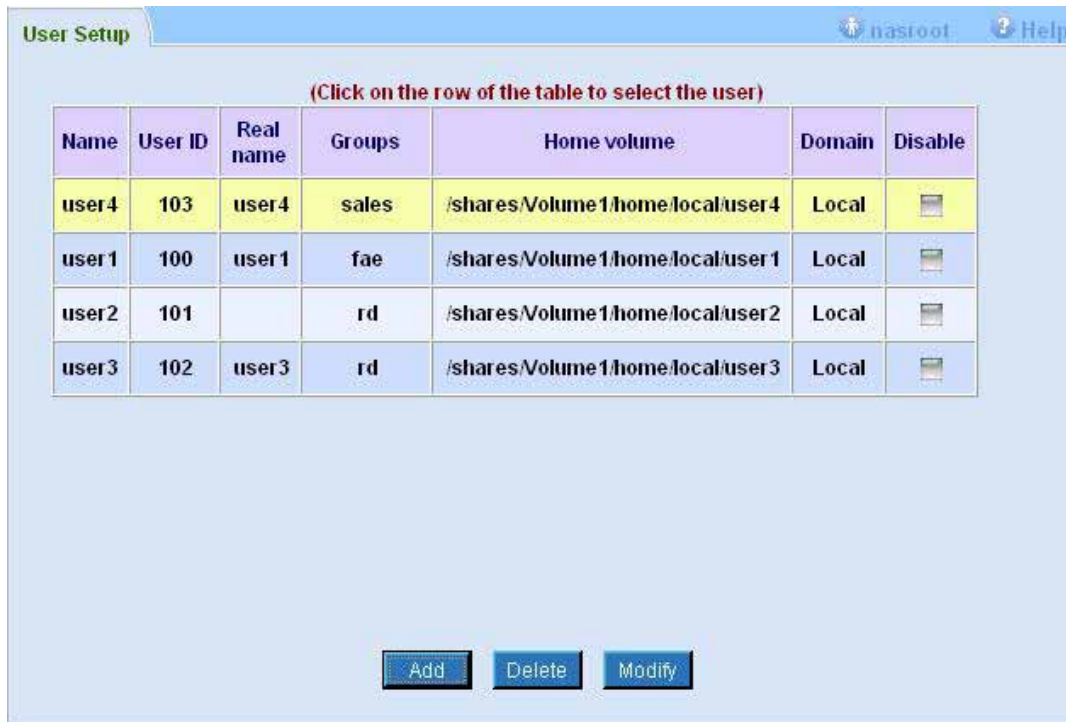
Figure 3-72

Date	Start date of the N-Sync job.
Time	Start time of the N-Sync job.
Profile	Profile name. If the log entry is generated from N-Sync Client, this field will be replaced by '---'.
Local Share	Local share name of the N-Sync job.
Sync OP	Synchronization operation of the N-Sync job.
Remote Server	Remote server name of the N-Sync job.
Remote Share	Remote share name of the N-Sync job.




Status	<p>Status of the N-Sync job. A successful N-Sync job has "Done" status. A failed N-Sync job is represented by a number marked in red, which is the N-Sync error code. Please refer to the following list for the definition of each error code:</p> <ul style="list-style-type: none">1: Syntax or usage error.2: Protocol incompatibility.3: Errors selecting input/output files, dirs.4: Requested action not supported: an attempt was made to manipulate 64-bit file on a platform that cannot support them; or an option was specified that is supported by the client and not by the server.5: Error starting client-server protocol.10: Error in socket I/O.11: Error in file I/O.12: Error in rsync protocol data stream.13: Errors with program diagnostics.14: Error in IPC code.20: Received SIGUSR1 or SIGINT.21: Some error returned by waitpid().22: Error allocating core memory buffers.23: Partial transfer due to error.24: Partial transfer due to vanished source files.30: Timeout in data send/receive.
---------------	--

3-7 User Privilege Settings

This menu is used to set system groups and user privileges. Figure 3-73 shows related information of user profiles.



(Click on the row of the table to select the user)

Name	User ID	Real name	Groups	Home volume	Domain	Disable
user4	103	user4	sales	/shares/Volume1/home/local/user4	Local	
user1	100	user1	fae	/shares/Volume1/home/local/user1	Local	
user2	101		rd	/shares/Volume1/home/local/user2	Local	
user3	102	user3	rd	/shares/Volume1/home/local/user3	Local	

Add Delete Modify

Figure 3-73 User Profiles Screen

Figure 3-74 shows configuration options of user privilege settings menu.



Figure 3-74 Configuration Menu Of User Privilege Settings

3-7-1 User Groups

Figure 3-75 shows the settings screen of user groups. It includes established groups and members of each group.



Figure 3-75 Groups Settings Screen

Detail contents of the user group option include:

- (1) Group Name.
- (2) Group ID: Group ID Number.
- (3) Members: Members that belong to the group.
- (4) Domain: Display the domain in which a member belongs.

Chapter 3

1. Add Group

To add a new group in the system, click “Add” in the Groups Settings. This mode allow the set up of users at the local level. Adding groups from a server requires the users to be set up on the server first and access & authentication via the Domain level in the “Network Setup” menu section. Figure 3-76 shows the contents of the Add Group screen.

The screenshot shows a software window titled "Add Group". Inside the window, there are three input fields: "Name" (empty), "Group ID" (containing the text "103"), and "Members" (a list box). Below the "Members" list box is a label "Members". To the right of the "Members" list box is another list box containing the name "richard". Below this list box is a label "Not members". Between the two list boxes are two small arrows, one pointing right and one pointing left. At the bottom of the window are three buttons: "OK", "Cancel", and "Back".

Figure 3-76 Add Group Screen

A.	Member/Nonmember	When a new group is added, click direction key to add its member(s) from the list on the right side of screen or to remove. To change members of a group, a member(s) can be deleted by using the direction key. This function is only enabled at the local user level. Domain level users must be added or remove at the server level.
B.	Group ID	When a new group is created, the system assigns it a unique ID. In general, there is no need for the system administrator to change that.

2. Delete Group

To delete a group, please highlight the group name and click “Delete” button. A warning message will appear requesting confirmation of action. After clicking “OK” the group will be deleted from the system. Figure 3-77 shows the confirmation screen to delete a group.



Figure 3-77 Confirmation to Delete a Group

3. Modify Group

To modify a group, please use the mouse and click the group name. And then click “Modify”. Figure 3-78 shows the page to Modify Group.

Members can be selected by using the direction button to include or remove. Updating save the changes. Selecting the “Cancel” button reverts back to the original membership of the group. Selecting the “Back” button take the user out of this screen without affecting the original membership.

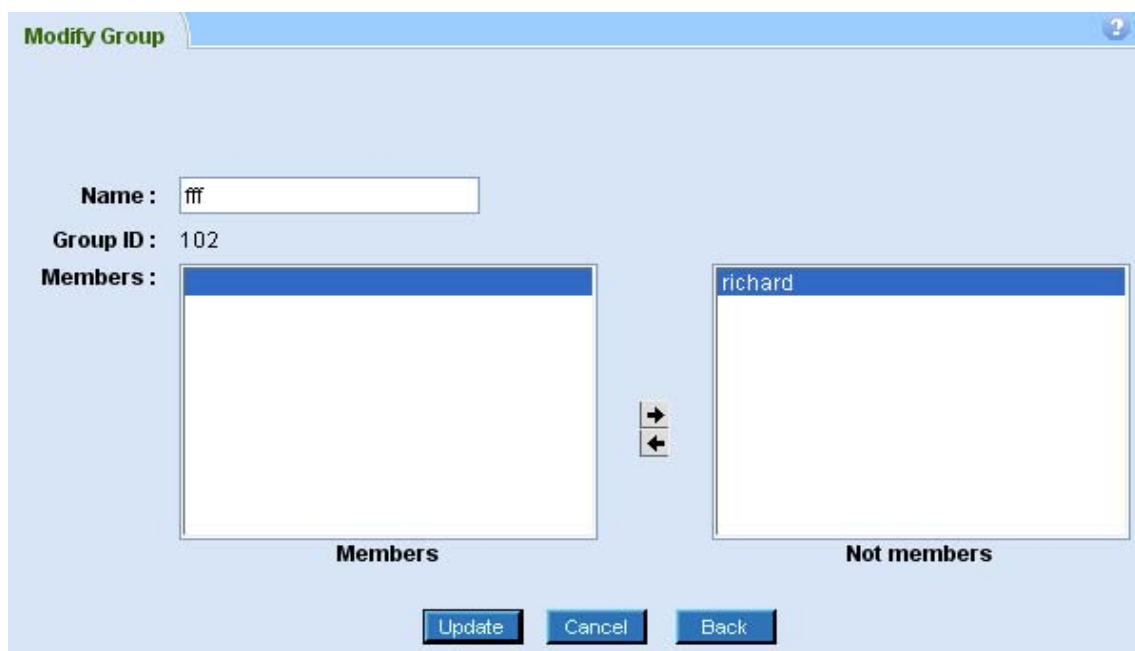


Figure 3-78 Group Modify page

3-7-2 User Accounts

Figure 3-79 shows the settings of user accounts, which includes all system members and their related information.

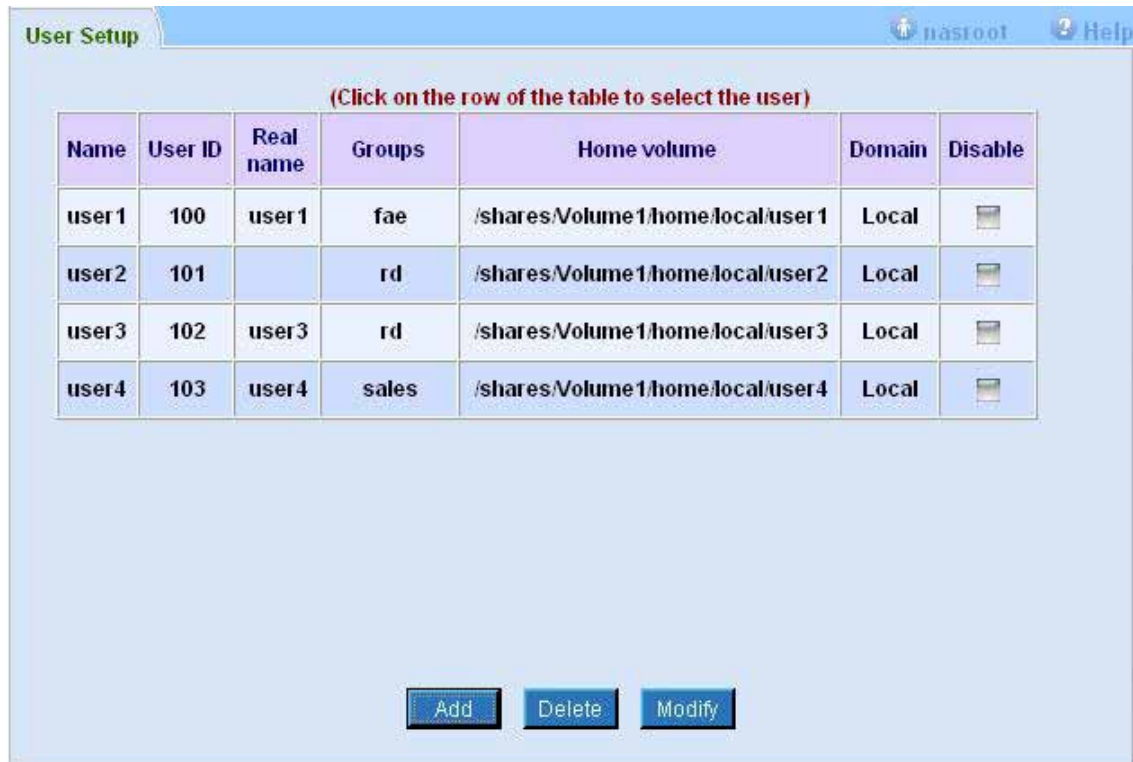


Figure 3-79 User Settings Screen

The displayed contents of user related information include:

- (1) User: User name to login to the system.
- (2) User ID: User ID number.
- (3) User Name: The full name of the user.
- (4) Attended Groups: Groups that the user belongs to.
- (5) Domain: Displays the network domain to which the user belongs.

1. Add Users

To add a new user to the system, click “Add” on the user settings page. Figure 3-80 shows the contents of the Add User page.



The screenshot displays a web form for adding a new user. The form is set against a light blue background. It contains the following fields and controls:

- Name :** A text input field containing the value "Richard".
- Real name :** A text input field containing the value "Richard Liao".
- Password :** A text input field with four black dots representing a masked password.
- Confirm password :** A text input field with four black dots representing a masked password.
- User ID :** A text input field containing the value "101".
- Group :** A dropdown menu showing the selected value "fff" and a downward arrow icon.
- Buttons:** Three buttons are located at the bottom: "OK", "Cancel", and "Back".

Figure 3-80 Add a User

When a new user is added, the following parameters must be provided:

- | | |
|-----------------------|--|
| (1) User: | A brief user name, used to login to the system. |
| (2) User Name: | The full name of the user. |
| (3) Password: | A password to login to the system, or use the "Blank Password." |
| (4) Confirm Password: | Confirm the password. |
| (5) User ID: | Upon the creation of each new user, the system automatically assigns the user a unique ID number. In general, the system administrator does not have to change it. |
| (6) Default Group: | Each user must belong to at least one group. Use the group list to select groups to which the user belongs. |



In the system, a Guest account is provided for users that do not have system authentication to access shared storage volume.

2. Delete User

To delete a user, use the mouse to highlight the user and click “Delete”. After confirmation, the user is deleted from the system. Figure 3-81 shows the confirmation screen to delete the User selected.



Figure 3-81 Delete a User



When a user is deleted, all the contents in its personal folder will be erased at the same time and the system has no way to restore, nor rebuild, its contents. Please backup all user data before deleting a user. It is best to deny access to the user in the Privileged Screen before deleting. The Administrator can then delete the user at his/her leisure.

3. Modify User

To modify a user, highlight the user and click “Modify.” Figure 3-82 shows the Modify User page.

The screenshot shows the 'Modify User' interface with the following fields and options:

- Name :** user1
- Real name :** user1
- Change password :** [masked]
- Confirm password :** [masked]
- Disable :** ☒ Yes
- Groups :** fae

Below the Groups list, there are three buttons: **Update**, **Cancel**, and **Back**.

On the right side, there is a list of **Unjoined groups** containing 'rd' and 'sales'.

Figure 3-82 Modify the Contents of a User

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When the contents of a user are to be modified, the settings of the following parameters are allowed for modification:

- (1) User: A user name to login to the system.
- (2) Real Name: The full name of the user.
- (3) Change Password: To change user password, enter a new password and, in the field under it, confirm the password by entering it again.
- (4) Confirm Password: Confirm the new password.
- (5) Groups: A user must belong to a group or may belong to several groups at the same time. Here, it displays a list of all groups that the user belongs to.
- (6) Enjoined Groups: Lists all groups that the user does not belong to.



If a user is in an NT domain, user information cannot be changed except at the Server itself.

3-7-3 User Quota

Viewing and modifying the quota of a user or a storage volume is provided. The system provides two ways of viewing the quota:

- (1) User Quota: Limits the quota of each user in each storage volume.
- (2) Storage Quota: Limits the quota of all users in each storage volume.

1. Quota Setting—User Quota Overview

Figure 3-83 shows an overview of the user quota.

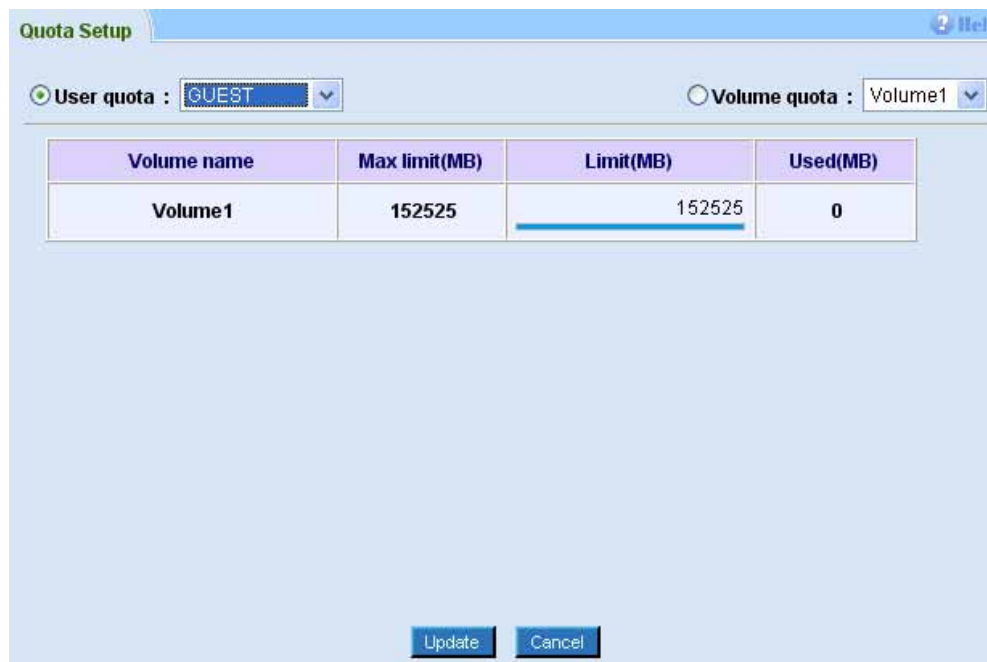


Figure 3-83 Quota setting—user Quota overview

Select a user that you would like to modify. The system provides two methods to change the user's quota limit.

- (1) Use "dragging point" to drag and set the quota limit of the user.
- (2) Use "keyboard" to enter and change the quota limit of the user.

The quota is limited to the number of users and the capacity of the drive volume.

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2. Quota Setting—Storage Volume Quota Overview

Figure 3-84 shows the overview of Storage Volume Quota

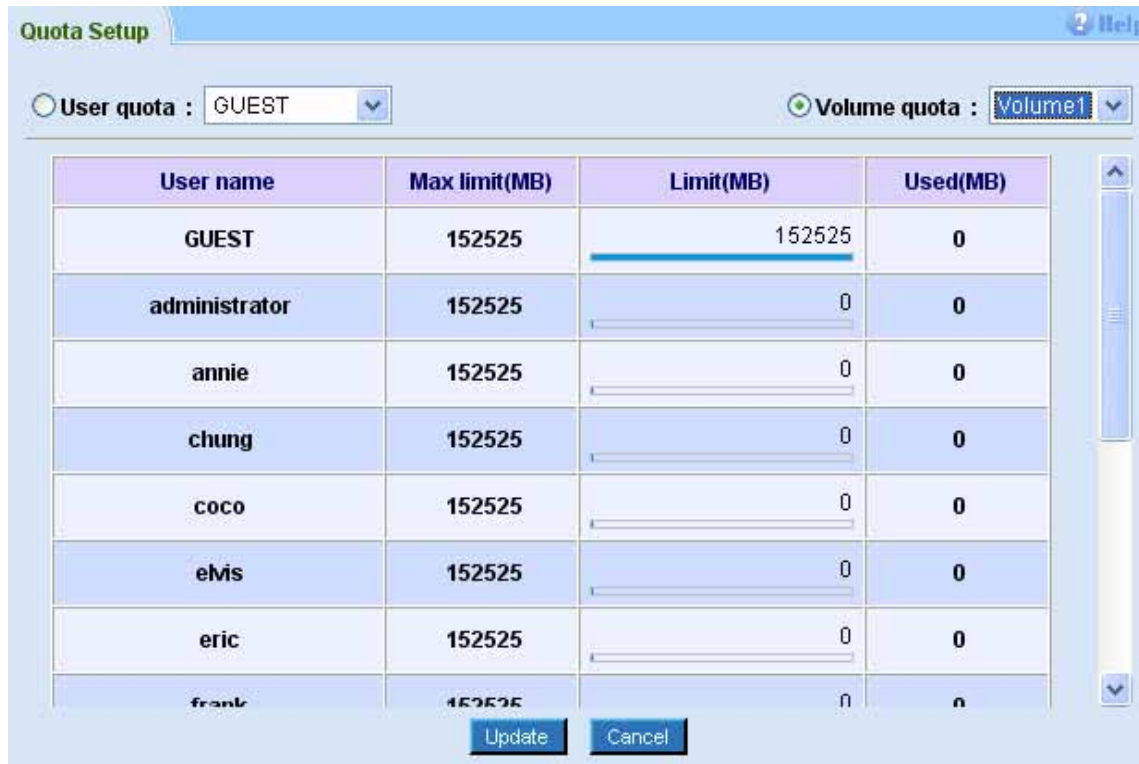


Figure 3-84 Quota setting—Storage Volume Quota overview

In the Storage Volume Quota Limit screen, first use the drag-down menu to select the storage volume on which you want to work. And then distribute it to every user according to the planned quota.

Use the two above-mentioned methods to change the user's quota limit. (Dragging Point or Keyboard Entering)

3-7-4 User Privileges



If “Read Only” or “Deny Access” privilege is applied to a group, all members in the group have the same privilege as the group does. Unless, if “Writable” applied to group then privilege will go with each user’s setting.

You may manage shared folders and set privileges of various shared folders for each user. Make separate settings for both types of network environments. From the upper left of the page select an option to set: Windows and Apple Platform, or UNIX compatible NFS Client.

: Using Windows, Apple, and UNIX platforms.

Figure 3-85 shows the Settings Screen of the Windows, Apple, and UNIX platforms.

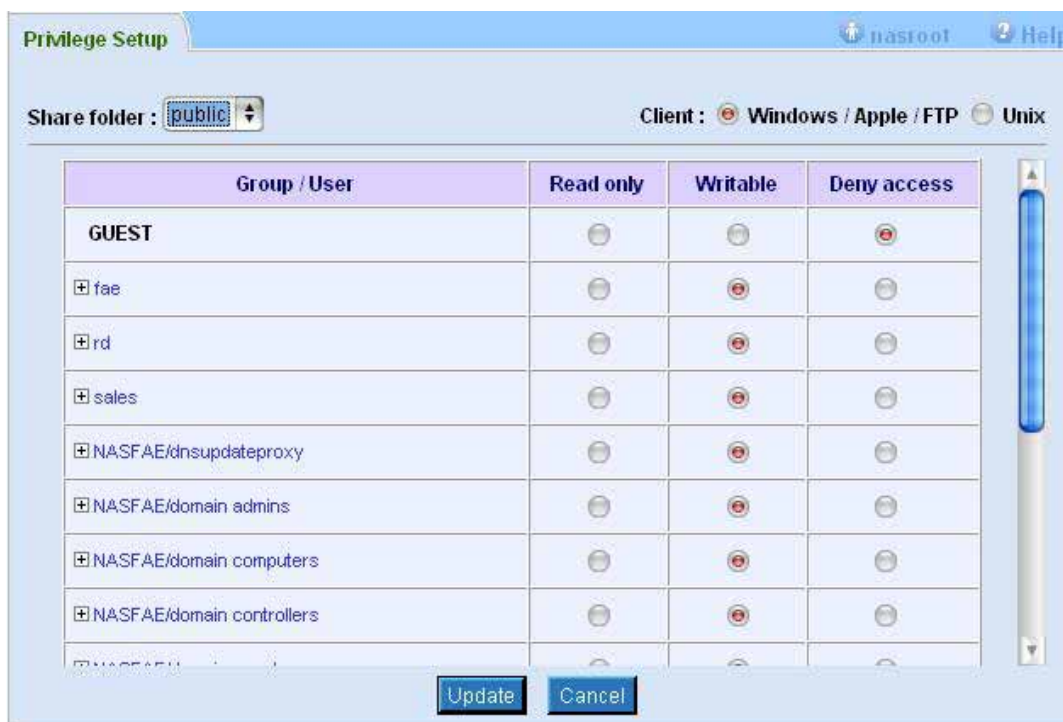


Figure 3-85 Common settings—Windows, Apple, and UNIX

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When a client uses Windows/Apple/UNIX, the system provides three different privilege settings for a folder: Read-only, Write, and Access Declined.

All parameters in privilege settings are described in the following manner:

- (1) Share a Folder: Use the drag-down menu to select the folder to change privilege settings.
- (2) Group/User: A vertical display that shows the contents of system groups. Click on the (+) box to see all members in a group.
- (3) Read-only: Only allows groups or users to read data in the folder.
- (4) Writable: Allow groups or users to write into and delete data in the folder.
- (5) Deny Access: Prevents groups or users from accessing the folder.

3-7-5 File Manager



Please be noticed that User privilege setting refer to 3-7-4 is “Share” level and higher grade than ACL “File” level permission. In the other word, if “Share” level has been setup with limited privilege e.g. “Read Only” then all of its sub-directory and file with ACL “File” level setting e.g. “Writable” won’t take effect with its permission.

At the first level, the screen displays the name of the storage volume, Owner, Size and Date/Time of creation. See Figure 3-86.

Double clicking on the Volume will display the second level. This level includes folder names, owners, size and date/time of last modification. See Figure 3-87. At this level, there is an option to delete the folder or file by selecting the relevant item. This is done by passing the cursor over the X beside the selected item. The cursor will change from a pointer to a finger. Clicking it again will display a warning message requesting confirmation. Clicking “OK” will delete the folder and there is no recourse for this action. Click Cancel to cancel operation.

The Administrator can continue to go down each level until only files remain. Double clicking on a file will download the file to the local hard drive of the computer. Only the administrator can view or delete the contents.

To return to the next higher level, click on the Parent directory.

Name	Owner	Size	Date
Volume1	root	4096	2003/01/24 15:05

Figure 3-86 File Management

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Figure 3-87 File Management

The following describes all contents and information in File Management:

- (1) File Name: The file name. If this is a storage volume or a folder, click on it to open the storage volume or folder to show its contents. If the project is already a text file, clicking on it will download the file to a local computer.
- (2) ACL: The “KEY” icon is the entry of ACL setting.
- (3) Owner: The owner of the file.
- (4) Size: The size of the file.
- (5) Date: The date on which the file was created or last modified.

Double click on “KEY” icon will lead you into the ACL settings, please refer Figure 3-88 for details.

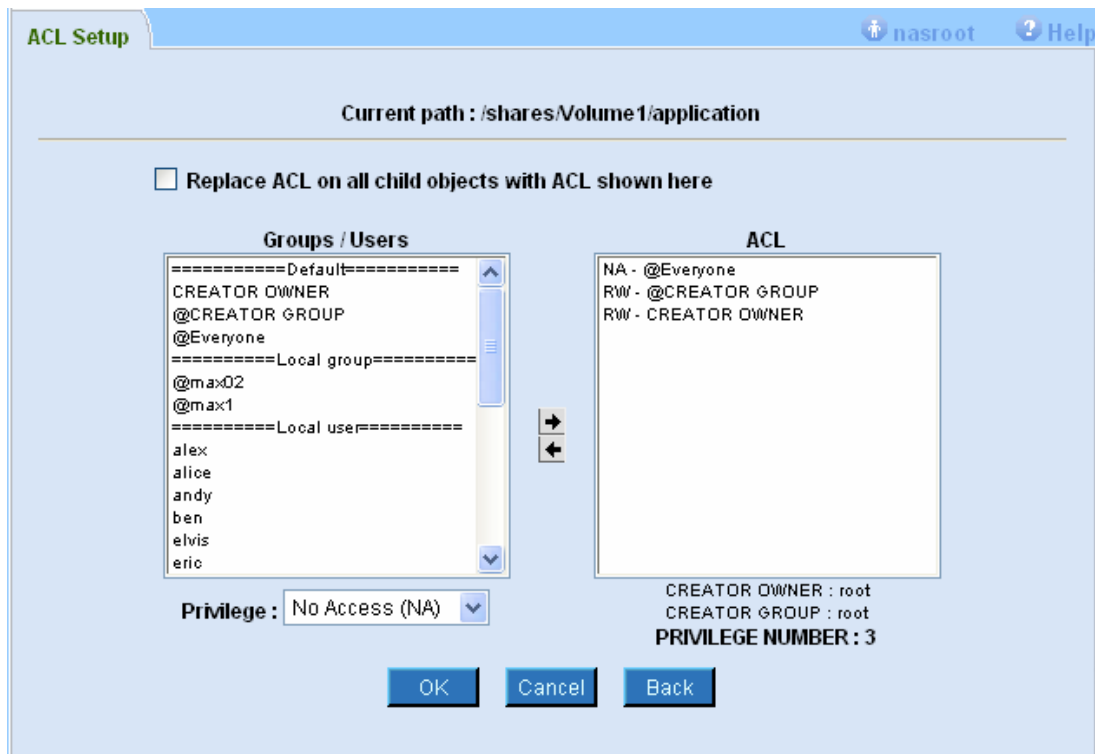


Figure 3-88 ACL Settings

Replace ACL on all child objects with ACL shown here:

If this checkbox is checked, the ACL shown here will replace the ACL on all child objects.

Privilege:

There are 3 privileges can be assigned to an object.

No Access (NA):

User is forbid to access the object.

Read Only (RO):

User is only allowed to read the object.

Read/Write (RW):

User is allowed to read and write the object.

Groups/Users:

This selection field list all users and groups. The initial "@" of an entry represents group.

ACL:

This field list ACL of the object.

CREATOR OWNER:

This term represents the owner user of the object.

CREATOR GROUP:

This term represents the owner group of the object.



The ACL permission granted in Orion NAS as following 4 rules in order. Whenever it comes first and it won't go any further.

The object permission right is granted accordingly if

1. UID is matched Creator Owner.
2. UID is matched any listed ACE.
3. GID is matched Creator Group or listed ACE.
4. Not apply for above 3 rules then it will granted permission of everyone.

UID→User ID

GID→Group ID

ACE→Access Control Entry

3-8 System Status

The System Status Menu options are shown in figure 3-89. Select any option and view its contents to understand the system status.



Figure 3-89 System Menu Options

3-8-1 System Information

System information is shown in figure 3-90.



Vendor name	Maxtronic
Product name	Orion
Model name	820SR
Serial number	000168
Hardware revision	1.2
Software version	0.1A(2006/09/29)
Running time	0 days, 17 hours, 37 minutes, 44 seconds

Figure 3-90 System Information

System information includes the following:

- (1) Vendor: Manufacturer of the system.
- (2) Product Name: Name of the product.
- (3) Model Name: Product model.
- (4) Serial Number: The serial number of the system is a 6-digit number.
- (5) Hardware Revision:
- (6) Firmware Version: This display version of firmware currently used by the unit. Updating the version can be completed in the Firmware Update under the System Setup area.
- (7) Running Time Elapsed time since system power on.

3-8-2 CPU

Figure 3-91 shows the status of CPU Activity and Utilization. This display will refresh every 2 seconds.



Figure 3-91 CPU Status

3-8-3 Memory

Figure 3-92 displays the memory type and the size of the memory (between 128MB to 512MB (max)).

Memory size	512 MB
Memory type	DDR

Figure 3-92 Memory Information

3-8-4 Network

The network port settings of the system are displayed here. (Gigabit)

NIC	Ether0	Ether1
Attach	Yes	Yes
Setup	DHCP/BOOTP	
IP address	192.168.2.101	
Subnet mask	255.255.255.0	
Gateway	192.168.2.254	
DNS server	61.218.85.2	
MAC address	00:06:12:00:04:42	00:06:12:00:04:43
Current speed	10 Mb/s, Half Duplex	10 Mb/s, Half Duplex

Figure 3-93 Network Information

3-8-5 Storage

All relevant information pertaining to the type, model, capacity and utilization of the drives and volume is displayed.



Storage Information

Disk Information
(Showing detail informations by double clicking the entry)

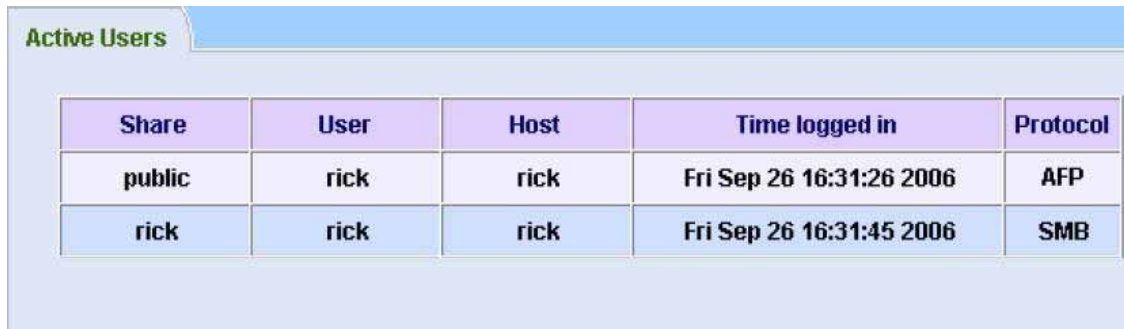
Name	Model	Capacity(MB)	Status
Disk 1	6L200M0	194481	Unused
Disk 2	6Y080M0	78167	Unused
Disk 3	ST38081	76319	Unused
Disk 4	WD1600J	152627	Unused
Disk 5	ST35006	476940	In Volume 1
Disk 6	ST35006	476940	In Volume 1
Disk 7	ST35006	476940	In Volume 1
Disk 8	ST35006	476940	In Volume 1

Volume Information

Figure 3-94 Storage Volume Information

3-8-6 Active Users

This page display all active users including Guest user. Related information of the individual user is also displayed.



The screenshot shows a window titled 'Active Users' with a light blue header. Below the header is a table with five columns: Share, User, Host, Time logged in, and Protocol. The table contains two rows of data. The first row shows 'public' as the share, 'rick' as the user, 'rick' as the host, 'Fri Sep 26 16:31:26 2006' as the login time, and 'AFP' as the protocol. The second row shows 'rick' as the share, 'rick' as the user, 'rick' as the host, 'Fri Sep 26 16:31:45 2006' as the login time, and 'SMB' as the protocol.

Share	User	Host	Time logged in	Protocol
public	rick	rick	Fri Sep 26 16:31:26 2006	AFP
rick	rick	rick	Fri Sep 26 16:31:45 2006	SMB

Figure 3-95 Active Users Information

Information displayed is:

- (1) Share: This is(are) the “Shared” folder(s) used after the user has logged on.
- (2) User: User name of the Active Client.
- (3) Time Logged in: Login time.
- (4) Protocol: The type of protocol used

3-8-7 System Log

This screen shows the usage of the system, including system messages, warning messages, and error messages.



Figure 3-96 System Log Overview

Date	Time	Message
2006/10/11	17:38:05	ETH0 was plugged
2006/10/11	17:43:21	Disk 1 was added!
2006/10/11	17:43:22	Disk 2 was added!
2006/10/11	17:43:36	Disk 3 was added!
2006/10/11	17:43:37	Disk 4 was added!
2006/10/11	17:43:43	Disk 4 was removed!
2006/10/11	17:43:43	Disk 4 was added!
2006/10/12	10:40:30	N-Sync error.(No object)
2006/10/12	10:40:30	N-Sync error.(No object)

Figure 3-97 Warning Log Overview



The screenshot shows a web-based 'System Log' interface. At the top, there are four buttons: 'Information', 'Warning', 'Error', and 'Download log'. To the right of these buttons are 'nasroot' and 'Help' links. Below the buttons is a table with three columns: 'Date', 'Time', and 'Message'. The table contains two rows of error messages, both dated 2006/10/12 at 10:40:30, with the message 'N-Sync error (No object)'.

Date	Time	Message
2006/10/12	10:40:30	N-Sync error (No object)
2006/10/12	10:40:30	N-Sync error (No object)

Figure 3-98 Error Log Overview

There are three message options available at the top of the screen for the administrator to view all conditions of the system.

(1) Information: Shows all usage messages of the system.

(2) Warnings: Shows warning (yellow) and error (red) messages.

(3) Error: Shows only error (red) messages.

Checking the Warning option will list only the Warning messages and similarly checking the Error Option will list only the Error messages.

Download log is an option to supply events notification information to MaxTronic for trouble shooting purposes. Click on "Download Log." A window will pop up and prompt a user name and password, as shown in figure 3-89. The file will be downloaded onto the desktop with a file name like "ErrorReport_000295.bin". This report can be email to MaxTronic (support@maxtronic.com.tw) and only be opened by MaxTronic for their detailed investigation.

Selecting the Clear Log will display a warning message to confirm action. Clicking OK will erase all messages in the log. This action is irrecoverable. Select Cancel to cancel action.



Figure 3-99 Enter a user name and password



Please set E-Mail Notice in the system. When the system generates any error message, it will send the message to the configured e-mail address, to alert the administrator of the system status and allow him to take appropriate corrective actions.

3-9 Backup Sync

This function provides the Orion NAS System with the ability to access client data through corresponding network protocols. SMB and AFP are supported.

The duplicate client data can be loaded into the system's specified data volume as a copy of data backup.

3-9-1 Volume Space

Before configure backup jobs, the administrator needs first define a volume as the backup space, thus, all backup data will be put into this volume.

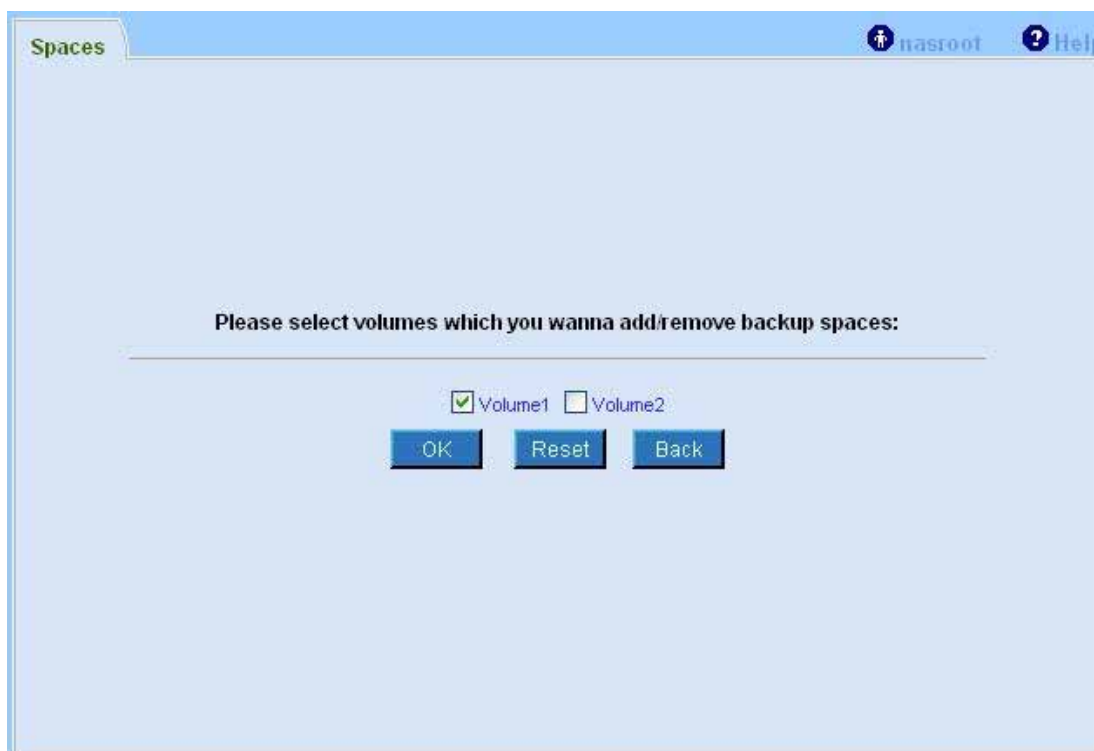


Figure 3-100

3-9-2 Options

Server list refresh interval

Select the server list refresh interval from the dropdown menu. The default is set at half an hour.

Allow users select client code page

Check this to allow users to select client code page for each job to fit the host's platform.

Allow users change backup target

If multiple volumes have been selected as backup volume spaces, this option will allow users to select which volume to put his/her backup data.

Log Level

Select the log level from the drop-down box.

- Least, only error and statistics result.
- General information, recommended.
- Higher, including directories information.
- Highest: Debug information, including all processed files.

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The system default is Level 1, since both Level 2 and 3 will contain a lot of data, especially if the source directory is large.

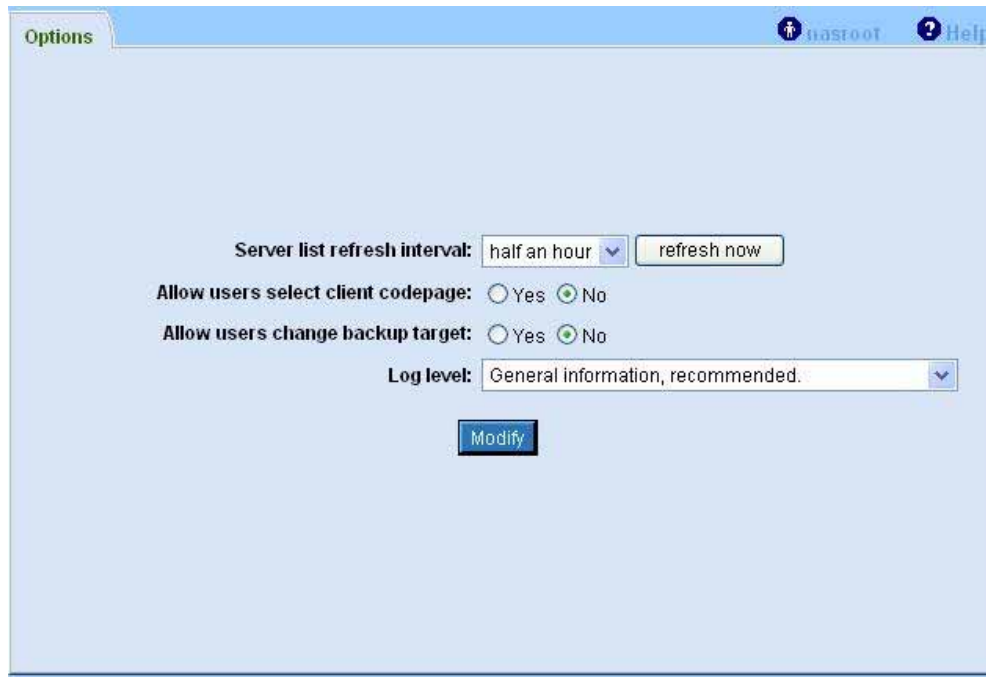


Figure 3-101

3-9-3 Jobs setting

A bsync job is identified by a job ID which is generated automatically. And a job defines the source host and directory, target volume and the way it runs at specified time. And each user could have his/her own job settings.

(1) Job list

A backup job can have multiple schedule settings and can also be triggered immediately in web GUI.

Any valid user could have his/her own job settings which are only accessible by himself/herself or nasroot.



Figure 3-102

Add/Delete/Modify: Changes the settings of the job's parameters, for example, protocol, directory...

Schedule: Changes corresponding schedules of selected job.

Execute: Start the job immediately, it's recommended to do so right after a job is added into the scheduler to verify the settings; A progress bar will be shown in the 'Status' column.

(2) Job settings

Owner:	Displays the users ID.
Network type:	Select either AppleTalk or Samba from the drop down menu.
From IP address:	Enter the IP address of the source host from where backup is made. You may enter an IP address or a host name.
Remote username:	<p>Select either 'As guest' or 'As normal user'.</p> <ul style="list-style-type: none">● If you select 'As guest', no further user information is required.● If you select 'As normal user', enter your user name and password.
Directory:	Displays the name of the source directory to be backed up. In afb/smb, it should be the shared folder's name. If the fields 'Form IP address' and 'Remote username' are not empty then the user may click this link to select a directory from the shared list. This shared folder list function will check the username and password to obtain the folders according to 'Normal user' authority.
Method:	Select either 'Update only' or 'Synchronize'. 'Update only' will incrementally copy new files/directories. 'Synchronize' will update first and then delete directories/files differing from the destination area (after first comparing with those available in the source area).

Add setting nasroot Help

Owner nasroot

Network type Appletalk ▼

Client Codepage Multilingual Latin 1 (850) ▼

From IP Addr.

Remote Username ☐ As guest
☒ As normal user (If the user is in the NIS domain, please write the username as "NIS/username")

Password

Directory

Copy to volume Volume1 ▼

Method ☒ Update only ☐ Synchronize

Figure 3-103

Chapter 3

(3)Schedule settings

List schedule nasroot Help

Job ID : 2 From IP Addr. : 192.168.100.5 Directory : tmp

Schedules		
Date	On weekday	Time
On weekday	Sun, Wed, Thu	03:25
On weekday	Thu, Fri, Sat	13:30
Everyday		03:35

Figure 3-104

At the top of the schedule is the job identifier and corresponding source host address and the directory name.

Each job can be triggered multiple times in a day.

- **Date:** Displays the date of the backup job schedule.
- **On weekday:** Displays weekday(s) for which the schedule is set.
- **Time:** Displays the start time of the job schedule.
- **Add:** Click to add a new schedule to this job.
- **Delete:** Click to delete a current schedule from this job.
- **Modify:** Click to modify an existing schedule.
- **Next:** Click to go back to the job listing.



A immediate execution in this web operation is recommended for a better estimation of the time required for each job so as to determine a better schedule

(4) Execution log

Time	Owner	Job ID	Message
10/26 18:17	nasroot.1		(smb) Start checking newer files for //192.168.100.5/tmp as user admin
10/26 18:19	nasroot.1		(smb) Open source file //192.168.100.5/tmp/max_temp/20060921_os10.4
10/26 18:19	nasroot.1		(smb) Close source file [/shares/Volume1/bsync_data1/nasroot/1/max_t
10/26 18:19	nasroot.1		(smb) Open source file //192.168.100.5/tmp/max_temp/20060921_os10.4
10/26 18:19	nasroot.1		(smb) Close source file [/shares/Volume1/bsync_data1/nasroot/1/max_t
10/26 18:19	nasroot.1		(smb) Open source file //192.168.100.5/tmp/max_temp/20060921_os10.4
10/26 18:19	nasroot.1		(smb) Close source file [/shares/Volume1/bsync_data1/nasroot/1/max_t
10/26 18:19	nasroot.1		(smb) Open source file //192.168.100.5/tmp/max_temp/20060921_os10.4

Time: From 2006 / 10 / 26 18 : 17 To 2006 / 10 / 26 18 : 25
 Job ID: * Owner: * Filter

Figure 3-105

During the execution time of each job, 820SR will record the log depends on the bsync options' setting for later reference, job owner and nasroot can check the result of each job in 'Backup log' as illustrated in the above table.

A red line indicates an error happened during execution, job owner can refer the message for further detail. For example, in the above table, the error is caused by improper permission so it was unable to read the source file.

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The filters – time interval, job ID, owner, are ANDed to obtain specific log messages.

Time interval From/To:	Default range is the first and the last records in the log.
Job ID:	An asterisk * indicates all job IDs, otherwise only specified job ID will be retrieved.
Owner:	Only nasroot has this option field to specify owner ID, the other users can only read his/her own job log. An asterick * indicates all owners ID.

(5) Configuration backup



The screenshot shows a web browser window with the title 'Jobs backup/restore'. The address bar shows 'nasroot' and a 'Help' link. The main content area has two radio buttons: 'Backup' (selected) and 'Restore'. Below them, a message states: 'Following settings will be backed up/restored : All jobs defined on this machine will be backed up / Restored'. A 'Location :' label is followed by a text input field and a browse button. At the bottom, there are three buttons: 'OK', 'Reset', and 'Back'.

Figure 3-106

For easier maintenance, nasroot can make a configuration backup by this page and save it externally. And he/she can also take this page to restore all the settings by specifying the action as 'Restore'.

3-10 Diagnostic mode

(1) Set up interval



The screenshot shows a web interface titled "Diagnostic Log" with a user icon and "nasroot" label. The status "Diagnostic mode is stopped." is displayed. A message explains that diagnostic mode collects dynamic system information and records details upon starting, with a run time limit of up to 1 week, defaulting to 1 hour. The "Run Time" is configured using drop-down boxes: 0 Days, 00 Hours, and 10 Mins. Below the configuration are three buttons: "Start", "Download", and "Clear".

Figure 3-107

Diagnostic mode is to collect system information, identify problems, and log them for later viewing.

- **Run Time:** Select the length of time for the diagnostic mode to run, from the drop-down boxes.
- **Start:** Click to begin diagnostic mode.
- **Clear:** Click to clear all fields.
- **Download:** After the execution, click to download diagnostic mode logs.



The generated log file may contains tons of messages up to several GB, so, there is no display page for this log file; In stead, please download it and contact technical support for further detail.

(2) Download the file



Figure 3-108

After the execution of diagnostic mode, you can click the 'download' button to download the log file, as illustrated in the above picture, you can only download it as nasroot, the password is the same as you login this web console.



Be ware of IE6's new feature, in the later version of IE, it will block pop-up windows to prevent some suspicious virus/ advertisement page, you need manually allow this pop-up page of download, for further detail please refer to IE or other browser's help.

3-11 Logout

To exit the administration page, click on “Logout” option in the Menu Area. Figure 3-109 shows the screen to logout. The system will automatically log out when the administrator screen has been inactive or idle for 5 minutes.

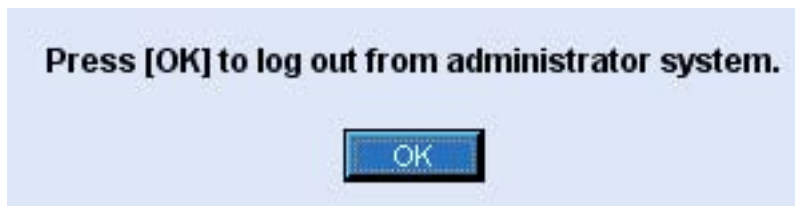


Figure 3-109 Logout



The administration page allows only one user to login at a time. If any other user is trying to login at the same time, the system prompts an error message.

3-12 Shutdown

To shutdown or reboot the system, click on “Shutdown” option in the Menu Area. Figure 3-110 shows the confirmation screen.



Figure 3-110 System Shutdown/Reboot

Selecting this option of “soft” shut down or rebooting ensure all users are warned and all files are closed before the shutdown or rebooting operation commences. Physical shutdown by operating the switch or terminating power directly to the unit may cause hardware or data damage.



To shutdown or reboot the system, a user must do so via the “Shutdown” or “Reboot” option on the administration page. If the system is physically shutdown directly when it is still operating, hardware damage or data loss may occur.

3-13 User-Level Access

A Client User may access the NAS via the web browser without the need to go through the Administrator but his access is limited to changing his own password only. He must have his User Name and old password to access this option.



Figure 3-111 User login

3-14 Changing Password

Figure 3-112 shows the screen for changing a user password. Enter the original password and choose a desired new password. After confirmation, the system will update the password for the user.



Name : rick

Old password :

New password :

Confirm password :

Figure 3-112 User login—changing password

Chapter 4

Using the LCD Control Panel

By using the Orion NAS System front control panel, the administrator may complete basic system configuration settings.

The front control panel has the following functions:

- (1) View and set network port**
- (2) Monitor system hardware status**
- (3) Reboot or shutdown system**



To restore default settings: Use the Orion NAS System front control panel, and complete the settings configuration described in this section.

4-1 Front Control Panel Functions

Introduction

The Orion NAS System front control panel is shown in figure 4-1. It consists of a LCD display panel that displays two rows of characters, each row with 16 characters, four buttons, and two LED status indicators.

Each HDD caddy/tray has 2 indicator LEDs to show HDD status. The top LED has two indications:

- 1) Green indicates normal operations,
- 2) Red indicates problem with the HDD.

The bottom LED also has two indications:

- 1) Orange indicates drive being accessed,
- 2) Off indicates idle



Figure 4-1 Orion NAS System Front Control Panel

Under normal operation, the front LCD Control Panel displays various system parameters continually for your reference. Each parameter is displayed for 2 seconds on the control panel, before displaying the next parameter.

The following parameters are displayed:

- (1) NAS Name and Model**
- (2) CPU Fan Speed (RPM)**
- (3) CPU Temperature (°C and °F)**
- (4) Ethernet IP Address**

4-1-1 LED Indicators

The following table describes the meanings of LED indicators on the front LCD Control Panel:

LED	Color	Description
Power	Green	Shows Orion NAS System is powered-on and is in normal operation.
Power Failure	Red	Shows Orion NAS System has one of redundant power either failed or AC power cord is not plug in.
Network Status	Orange	Shows Orion NAS System is connected to the network.

4-1-2 Buttons

Use the (▲) up arrow, (▼) down arrow, ESC, and Enter keys to select various configuration settings and menu options for Orion NAS System configuration. The following table illustrates the keys on the front control panel.

Key	Description
(▲) Up Arrow	Select the next option of configuration settings menu.
(▼) Down Arrow	Select the previous configuration settings menu option.
Enter	Enter the selected menu option, sub-menu, and parameter setting.
ESC	Escape and return to the previous menu.

4-2 Basic Menu Options on the LCD Control Panel

When the LCD Control Panel is in normal state, use the Enter Key followed by the (▲) up arrow or (▼) down arrow to get into the options of the Basic Menu. Using the (▲) up arrow only will allow two other special control modes. These are resetting to factory default or resetting the Admin Password.

This section will cover all options in the Basic Menu as well as the two special control modes.

4-3 Special Mode

4-3-1 Resetting to Factory Default

Use the (▲) up arrow to select the Factory Default setting. Note that there are two ways of resetting to factory default. The first method is via the GUI at the Factory Default in System Setup in the Menu Area (see section 3-4-8). The second method is via the LCD Control Panel. This option provides default settings of the whole system. Users, groups, user quotas, user privileges, and network settings will be erased if this function is performed while the drives are still inserted. Pay special attention before using this option, and be sure to remove all drives prior to activating this process. Otherwise, all contents will be erased and restored back to default settings. Alternative is to ensure a backup of the configuration setting is completed before completing this action. See section 3-4-7 to backup the configuration file.

To use the “Factory Default” function, press the (▲) up or (▼) down keys to select “Factory Default Restore Settings” and press “Enter”. When confirmation for restore default appears, press the (▲) up or (▼) down keys to “Yes” and then press “Enter”. The default settings will be restored.



When entering the administrator password, enter a “()” to fill in any blank. Otherwise, after entering the administrator password, press the “ESC” key to jump through empty characters.

Reset Administrator Password

Use the (▲) up arrow to select the Password Reset for Administrator Password. This option will reset the Administrator Password to default password. This function should **ONLY** be performed when the Administrator password is lost or forgotten. The unit should be returned to the dealer to perform this operation. The unit should be shut down and all drives removed and the base unit returned. When the Administrator Password has been restored to default password, re-insert the drives and use the default password to gain access by the Administrator. Default Password should be changed immediately to ensure security. The changed password should now be safely stored in a safe location for future reference

For the Dealer. Follow the procedure supplied by your distributor to complete this process. Users, groups, user quotas, user privileges, and network settings will be erased if this function is performed while the drives are still inserted. Pay special attention before using the option, and be sure to remove all drives prior to activating this process. Otherwise, all contents will be erased and restored back to default settings. When the Administrator password has been reset to default, return the unit back to the customer. Service fees may be charged for this operation.

Alternative procedure is for the customer to send in writing officially, the name and contact details of their System Administrator to the local Distributor to obtain the procedure to reset the Administrator Password to default. The Distributor will confirm the bona fide of the System Administrator before passing over the procedure. This is to ensure that the security of the Administrator Password and subsequently the security of the data is not compromised.



Warning: All configuration settings, groups, user quotas, user privileges, and network settings will be restored to default settings!



When the option is executed, the system cannot recover the system configuration before execution.



Once the option is executed, you cannot stop the execution.

4-4 System Memory Size

This shows the memory size inside the Orion NAS System Network HDD Array.

4-5 CPU Information

This shows the model and speed of the system CPU.

4-6 Advanced Menu Options

When the Orion NAS System front control panel is in an idle state, press the “Enter” key to get into the options of the Advanced Menu.

4-7 Network Menu

This allows Ethernet configuration settings to be changed. Its options are as followings:

11Bond 0

- 111Bond0 Status
- 112Bond0 IP Address
- 113Bond0 Subnet Mask
- 114Bond0 Gateway
- 115Bond0 Hardware Address

12Channel 0

- 121CH0 Status
- 122CH0 IP Address
- 123CH0 Subnet Mask
- 124CH0 Gateway
- 125CH0 Hardware Address
- 126DHCP Status

13Channel 1

- 131CH1 Status
- 132CH1 IP Address
- 133CH1 Subnet Mask
- 134CH1 Gateway
- 135CH1 Hardware Address
- 136DHCP Status

4-8 System Menu

This is used to set basic system parameters. All options of the system menu are listed as follows:

(1) 21 Clock

- 211 Date: Set date
- 212 Time: Set time
- 213 Time zone: Set time zone

(2) 22 Shutdown

- 221 Reboot System: Restart system
- 222 Halt System: Shutdown system

4-9 Miscellany Menu

This is used to set miscellany option of system. Its options are as followings:

- 1) 31 Setup Password: Change root password

Chapter 5

System Operation

The concept behind the design of the Orion NAS System by MaxTronic International Co., Ltd. is to make it as convenient and easy to operate as possible for users. However, under certain unusual circumstances and improper operations, data damage might occur.



Orion NAS System is not a backup server. You have to use an independent backup server for backup tasks (e.g., a tape backup server) to prevent data loss.



When only one HDD is damaged, the function of RAID-1, RAID-3 and RAID-5 can only ensure data integrity. If the administrator makes mistakes or operates improperly and deletes a HDD that should not be deleted, all data will be lost. An independent backup server is necessary to guarantee better data security.

5-1 Normal Operation

Under normal operation, Orion NAS System handles all RAID tasks: network connections, user privilege settings, setting up parity bit or data support, and monitoring the status of the system itself.

5-2 Data Synchronization

When the system starts up for the first time or is shut down abnormally, the system will first check if there is any discrepancies in the data copy setup of the storage volume in RAID-1, RAID-3 or RAID-5 and what is stored in ROM. If there is no discrepancy, the system will continue normal operations.

If errors exist, then the system will automatically perform synchronization of the storage volume data, according to the associated location of parity bit.

When the system is performing data synchronization, the data stored in a storage volume will be recovered into the appropriate RAID set. However, under these conditions, the process must not be interrupted as it cannot then make a full recovery or list the parity bits of the storage volume in the RAID set.

If interruptions occur or another drive is damaged or removed while the system is undergoing data synchronization, the result will cause the loss of all data in the storage volume that cannot be recovered.



When the system is performing data synchronization, do not delete any of the RAID-0, RAID-1, RAID-3 or RAID-5 storage volumes or remove any drives. Also do not remove more than one drive in a RAID 1, 3 or 5 set while the unit is in operation. Should a second drive be removed or failed, then all data will be lost.

5-3 Hard Disk Drive Damage

Orion NAS System will automatically detect any damaged HDD, which fails to perform access tasks. If any HDD is damaged, the system will automatically stop using the damaged HDD and send e-mails to notify the system administrator as well as providing an audible warning (may be turned off by Administrator as an option but not recommended).

5-4 Hard Disk Drive Replacement

If any HDD is damaged, it is possible to acquire this information from Storage Volume Overview in the administrative page, or the indicator light on the HDD caddy/tray. Orion NAS System supports HDD hot-swap, thus there is no need to shutdown the system to replace the failed HDD. If a Hot Spare is available as part of the RAID set, the rebuilding process will automatically be initiated with the hot spare drive. The failed drive can be replaced and it will now show up as an Unused drive.

See Figure 5-1



Name	Volume2
Type	RAID 5
Capacity(MB)	145918
Used(MB)	0
Rebuild speed	High speed
RAID disks	Disk 5, Disk 6, Disk 7 [3/3]
Spare disks	Disk 8
Stripe size	64 KB
Status	RAID sync (Complete-rate = 0.4%, Remain-time = 107.3 mins, Speed = 11544 K/sec)

Back

Figure 5-1 Spare Disk Auto-Rebuild

Please follow the following steps to replace the failed HDD:

- (1) Make sure you have a replacement HDD and its capacity must be equal or greater than the damaged HDD.
- (2) Pull the damaged HDD out of its Caddy. Make sure the indicator LED is red on the Caddy from which it will be drawn. Taking out the wrong drive **WILL** destroy your data.

- (3) Take out the damaged HDD and replace with the new HDD.
- (4) Put the Caddy back into the Orion NAS System unit

This new drive can be added to the RAID set as the new Hot Spare. The process is to highlight the Volume and select Modify. Add the new drive to the RAID set as a spare and click OK.

Using RAID-1 and RAID-5 provides protection against only one damaged HDD. If 2 HDD are damaged at the same time or the system administrator mistakenly replaces a not-damaged HDD, all data in the RAID storage volume **WILL BE LOST**.

5-5 Automatic Data Recovery

If a RAID-1, RAID-3 or RAID-5 function is enabled, Orion NAS System will automatically recover the data onto the new HDD or a Hot Spare if it is available.

Limited Warranty

MaxTronic International Co., Ltd. guarantees all network hard disk drive arrays are thoroughly tested before they leave the factory and should function normally under general conditions. In case of any system malfunction, MaxTronic International Co., Ltd. and its local representatives will be responsible for its repair without cost to the customer, if the product failed within the warranty period and under normal usage.

MaxTronic International Co., Ltd. is not responsible for any damage or loss of data, deemed to be caused by its products. It is highly recommended that Users conduct the necessary back-up practices.